

*American*

# FORESTS

JANUARY 1951

50 CENTS



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Pennsylvania Fire?

(See Answer Below)

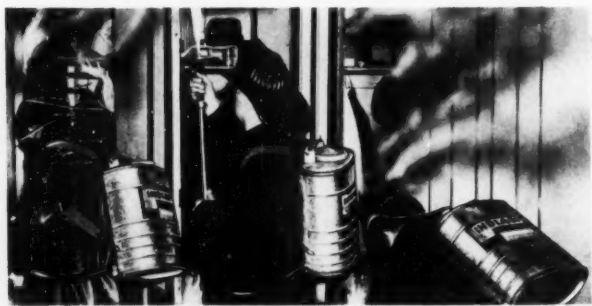


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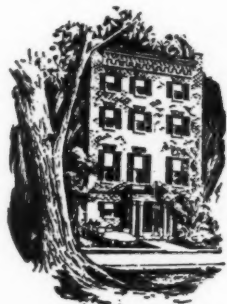
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VOLUME 57  
NUMBER 1



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The American Forestry Association, publishers of *American Forests*, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

# American FORESTS

PUBLISHED BY THE AMERICAN FORESTRY ASSOCIATION

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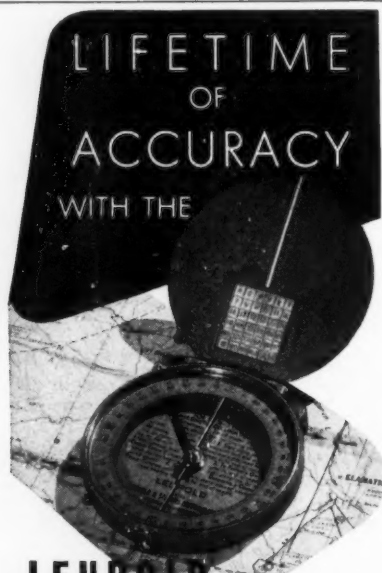
**Cover . . . . .**

*Those who journey into the great outdoors this time of year in quest of winter sports often reap a special reward from nature in the form of breathtakingly beautiful patterns wrought by snow and wind. This month's cover is a case in point. Here in the Sugar Bowl ski area on Tahoe National Forest, located high in the Sierra Mountains of northern California, Photographer Russell D. Daigle of the U. S. Forest Service captured some unusual shadow effects which highlighted a striking scene of mountain ski slopes topped by sentinel pines. There's a sense of peace and solitude in such a setting, particularly cherished in these trying days.*



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American

FORESTS

# Forum

**In This Issue**—At long last, the *Washington Lookout* is being resumed (page 4) as a monthly feature. *American Forests* was indeed fortunate to obtain the services of **G. H. Collingwood**, nationally known forester, researcher and writer, to conduct this highly important and complex reporting chore dealing with national legislation and executive department action affecting forestry and conservation.

Mr. Collingwood, for 12 years preceding 1940, served as Forester for The American Forestry Association, during which time he authored the first edition of *Knowing Your Trees*. He has written numerous popular and technical forestry articles and had been a frequent contributor to these pages. Currently a forestry expert for the Library of Congress, he has in recent years served with the Hoover Commission as research director for the task force on Agricultural Activities, forestry consultant for the United States Chamber of Commerce and chief forester for the National Lumber Manufacturers Association.

The lead article this month, *Oregon States its Case Against Socialized Forestry*, finds that state's **Governor Douglas McKay** authoring a vigorous defense of his people's pioneer heritage of local self-government. There is considerable thought-provoking material here, whether or not the reader agrees wholeheartedly with Governor McKay. The sentiments expressed carry added weight, coming as they do from the nation's leading lumber producing state. Again, however, there are two sides to this issue, and the columns of *American Forests* are available to anyone wishing to author a reply.

January also marks the introduction by **James Stevens**, well known West Coast author, of a series of Bunyanesque short stories woven around Davy Crockett. Davy in real life was the kind of hero about whom considerable folklore was written in the imaginative Almanac style of the 1840's, and it is this material which Stevens has used as a basis for his entertaining sketches. It's the kind of tale that had its origin in early

logging camps and thus has a place in a forestry magazine. The first, *Davy Crockett's Cougar*, will be found on page 13.

Another bit of "must" reading is *The Turtle and the Oak* (page 22), a fine piece of entertaining writing which you are likely to read all the way through before you realize it packs a moral. The author, **Ewart A. Autry**, a welcome newcomer to these pages, writes from Hickory Flat, Mississippi.

Among other authors in this issue are: **Carl Wright** (*Menacing Mesquite*) who writes from the towering Main Building on the University of Texas campus, Austin; **John L. F. King** (*Quick Death for the Gypsy Moth*), secretary of the Cape Cod Pest Control Committee and a newspaperman with the Cape Cod Standard-Times, Hyannis, Massachusetts; **J. Lee Deen** (*Forestry Education in Europe*) is dean of the division of Forestry and Range Management, Colorado A. & M. College, Fort Collins; **Dorothy Gray Guck** (*Prayer Trees of the Southwest*) is the wife of a forester who lives at the Mesa Ranger Station, Capitan, New Mexico; **F. M. Nier** (*Venezuela's Forest Resources*) was formerly connected with the U.S. Embassy at Caracas, Venezuela; **Roland B. Miller** (*Adirondack Pack Basket*) is with the New York Conservation Department, Albany.

And, if you should like to know more about the Dinosaur Monument problem (*Dinosaur's Rugged Beauty*, page 16) write The American Forestry Association, 919 17th Street N.W., Washington 6, D. C. for a copy of the leaflet, "Will You Dam the Scenic Wild Canyons of Our National Park System?"

**Looking Ahead**—If all goes well, **Nelson H. Fritz**, whose most recent contributions to these pages have been *Harvest Time for Holly* (December 1950) and *Forestry Assignment in Korea* (August 1950), may be forwarding an article on Formosan forestry sometime during the year. He was scheduled to leave at press time for Taiwan (Formosa) on a two-year assignment as a senior engineer (forestry) for the J. G. White Engineering Company of New York City.



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# WASHINGTON LOOKOUT

By G. H. COLLINGWOOD

The 82nd Congress, convening as it does in an atmosphere tense with international and domestic implications, probably will not be remembered for its enactment of many and fruitful conservation or forestry measures. In fact, with prospects of reducing peacetime government expenditures by as much as five billion dollars in order to meet the costs of present and potential defense needs, administrators of conservation bureaus will do well if their appropriations are held to the present levels. Neither conservation or forestry laws nor materially larger appropriations need be expected so long as the present emergency continues.

Questions are already being asked as to whether cooperative forest fire prevention will continue to be supported as in the past. Experiences during World Wars I and II, coupled with evidence on every hand that lumber, paper and other forest products are vital to peacetime economy as well as that of wartime, lead to the belief that federal, state and private agencies will not be allowed to relax their vigilance in behalf of protection of all forest properties. The same holds true for increasing threats from less dramatic attacks of insects and tree diseases.

Research conducted at the Madison, Wisconsin Forest Products Laboratory may be expected to receive appropriations equal to or even greater than those of the past year. The value of this kind of research during times of national emergency is self-evident. Less clear to the individual is the need for research where returns may be more in the future. With this in mind, what will be the prospects for appropriations in support of research in forest influences, wildlife management, grazing, or for the program under way at the National Arboretum? If such long range programs are to get the desired support from Congress, they must be dramatized and their results given an importance which researchers themselves sometimes have difficulty in describing.

What, also, will be the fate of bills to set up new or broader programs and to acquire additional appropriations? What is the immediate future

of the long enduring efforts of the Forest Service to secure legislation for federal control of forest operations on privately owned lands? What about the efforts to provide basic data for a comprehensive and adequate national water resources program? Will last session's bill be revived to set up a program whereby the surveying and mapping of the United States can be completed in 30 years?

No one can answer such questions with any degree of confidence, but progress made by bills in the past Congress certainly foreshadows what may be in store for the future. That the Anderson forest regulation bill, S. 1820, was never given hearings or reported by the Senate Committee on Agriculture and Forestry, gives its supporters small reason for hope.

On the other hand, the fact that H. R. 6257 (to provide a basic-data program for the nation's water resources) and H. R. 6900 (to accelerate the federal government's surveying and mapping program) were each the subject of extensive public hearings during February and June, 1950 and were reported favorably by the House Committee on Public Lands, puts them in a different light. Prospects are even brighter because of the appearance in mid-December of the unusually attractive and comprehensive House Document No. 706 entitled, "A Program to Strengthen the Scientific Foundation in Natural Resources." Between the covers of this report are copies of the two bills and authoritative statements by responsible officials of each of the interested government bureaus.

It must be remembered, however, that these bills, and all others introduced in the 81st Congress and not enacted into law, are dead. Except for purposes of record and as foundation on which to think and do further planning, they can be thrown into the ash can. The same text can be included in a new bill, or the old text can be altered to conform with new points of view developed in committee hearings or in public discussion. But if introduced in the 82nd Congress, each bill will probably receive a new number. Moreover, regardless of how far the predecessor

bill got in the former Congress, the new one must proceed through the same channels as any new bill.

The organization of the new Congress includes the appointment of committees, almost as if they were new. Actually, this is largely perfunctory. Except as changes in the membership of the Senate or House will have occurred and new members appointed to replace those who were not returned, makeup of the several committees will be much the same as in the previous Congress. When the chairman of a committee is not returned to Congress, however, a new chairman is appointed from the remaining committee membership in accordance with the rule of seniority.

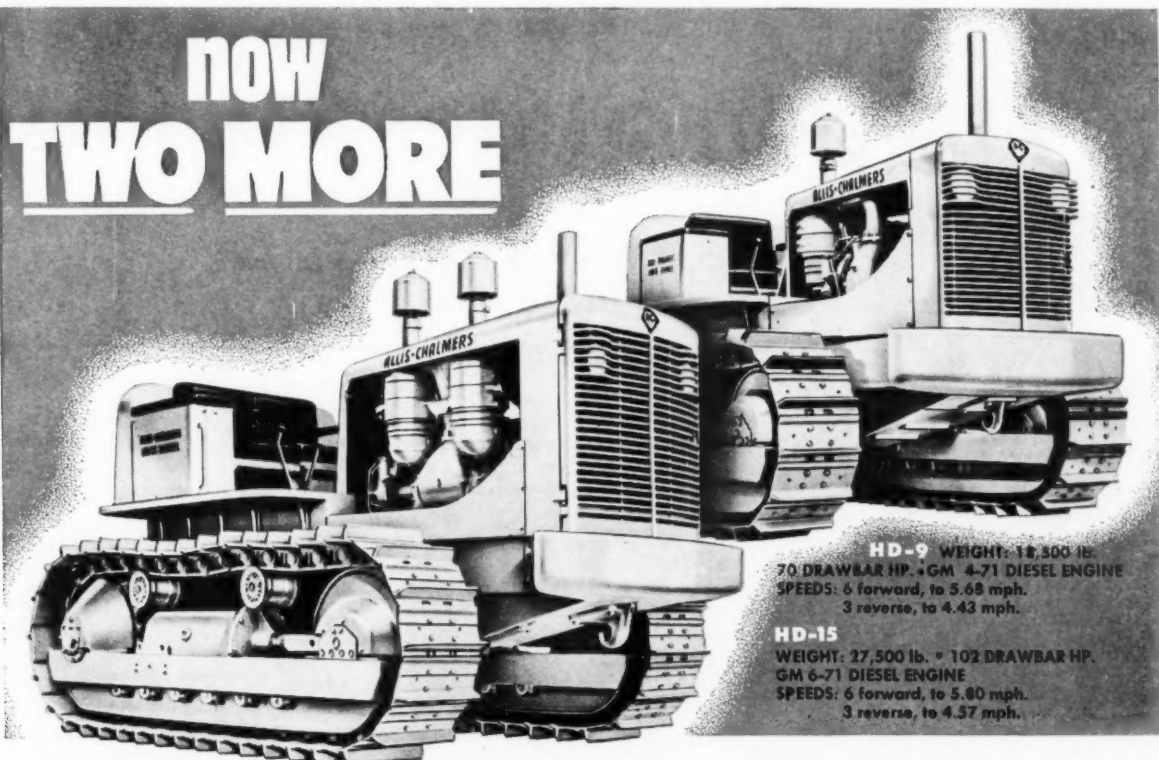
The organization of the 82nd Congress will be marked by the appearance of new chairmen of three committees vital to the conservation interests of the nation. Of some interest, although perhaps of small importance, is the fact that each change is made necessary because the former Congressman did not choose to run for re-election.

Next in importance to the President's Budget are the appropriations committees of the two legislative bodies. In the House, where consideration of appropriations bills must start, Clarence Cannon, of Missouri, continues as chairman. Before achieving chairmanship of the entire committee, he served many years as chairman of the sub-committee on Agricultural Appropriations, where he acquired an intimate knowledge of many conservation matters. Jamie L. Whitten, of Mississippi, has served for several years as chairman of that sub-committee and will probably continue during the 82nd Congress. Michael J. Kirwan, of Ohio, is expected to continue to head up the sub-committee to handle Department of Interior appropriations.

From the House, the appropriation bill will go to the Senate committee headed by Senator Kenneth McKellar, of Tennessee. Those portions of the bill administered by the Department of Agriculture will be considered by a sub-committee headed by Senator Richard B. Russell, of Georgia. Those dealing with national parks and other Department of Interior activities will go to another sub-committee under Senator Carl Hayden, of Arizona.

Important changes are scheduled for the committees of the two houses which consider bills which affect the Forest Service and the Soil Conservation Service.  
(Turn to page 35)

# now TWO MORE



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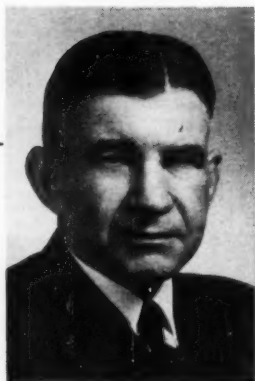
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# Oregon States Its Case: A



By DOUGLAS McKay • Governor of Oregon

**S**HALL Oregon continue in its proud pioneer heritage to govern itself with laws written by its own citizens, to manage its vast natural resources, in short, to determine its own destiny? Or, are we to be declared incompetent by federal decree to manage our own affairs and submit meekly and docilely while the "new thought" crowd hypnotizes us with its deadly socialized anesthesia?

Today, the sacred principles of local self-government is threatened by Valley Authorities, which would dilute local and state governments to water-weak impotency, and by a host of other weird proposals to socialize various segments of our social and economic structure.

To Oregonians, by far the most arrogant of these dangerous schemes is the proposed federalization of the nation's forest lands. When you talk about forests you are talking about something we Oregonians understand. Ours is the greatest timbered state of the nation with more than a fourth of all the U. S. virgin timber stand. Ours is the greatest lumber producing state of the union, has been since 1938, and supplies nearly a fourth of the nation's lumber needs. Ours is the pioneer state in perfecting state forestry on a high plane of operable success.

It is understandable that we Oregonians resent any imputation from a national level that we abandon

one single prerogative of local government to remote boards and commissions now in residence in our national capital.

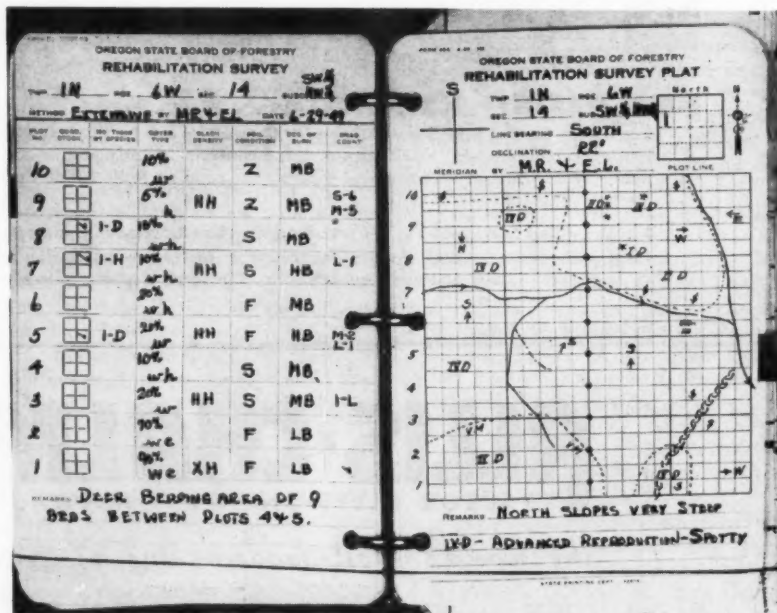
Why? Because, as a state, we have blazed the first daring trails in many new legislative fields and watched proudly while the rest of the nation followed. We were the first to adopt the secret or Australian ballot. We introduced the initiative and referendum and recall to America. We pioneered in the direct primary and adopted the first corrupt practices laws. Oregon early provided for direct election of United States senators. We have been in the vanguard in social legislation and liberal reforms now universal in the nation.

Why, specifically do we resent proposals to federalize our forests such as Senator Clinton Anderson's Senate Bill 1820 which would require

us, as a state, to go hat in hand to Washington to find out if they approved of our forestry program?

Great is our record in legislative reform leadership, but even more impressive is our long history of development of state forestry legislation. As early as 1907, when President Theodore Roosevelt was busy setting aside another 40 million acres of the public domain in Oregon, Washington, Idaho, Montana, Colorado and Wyoming into national forests, Oregon's legislature was also busy establishing our first Board of Forestry.

In that 1907 Act, a forest fire code was adopted providing for the appointment of fire wardens, fixing a closed season for burning, requiring the annual burning of slash, stipulating spark arresters on power logging equipment, outlawing incendi-



Tillamook planting is preceded by careful land surveys, graph-maps

# : *Against Socialized Forestry*

**Says the governor of the nation's greatest timbered state: "Valley authorities threaten sacred principles of local self-rule. The record shows we can manage our own forests"**

arism and fixing penalties. Even before that time, in 1904, private timber companies had already established fire protection districts and were taking first steps in forest management.

This was just a beginning and it is significant that in every successive legislature in the 43 years since adoption of the first pioneering fire control act, state forestry laws in Oregon have been improved, expanded, strengthened and kept up to date, generally at the behest of and with full support of Oregon's citizens including those engaged in the forest industries.

In 1909, the Oregon legislature created the Oregon Conservation Commission which was charged with the responsibility of studying the natural resources of Oregon and outlining a program. The 1911 assembly adopted the Commission's report, which set up a permanent State Board of Forestry, provided for a state forester and an appropriation of \$60,000 for the biennium. This was the genesis of Oregon's state forestry, a bold departure and unique interpretation of a state's obligations to its people. It established the right of a state to determine how a private property owner should operate and manage his lands for the greatest good of his neighbors and the people of the state.

Up to 1913, payments for fire protection had been voluntary, but in that year, backed by forest landowners, the "Fire Patrol Law" was passed making mandatory payment for protection costs on an acreage assessment basis. This was the first law of its kind in the United States. For the next 20 years, Oregon concentrated on fire protection, the first step in any rational program of forest management. Laws were amended to strengthen our protection setup. The state forester was empowered in



**Oregon's tree planting crews are making progress in rehabilitating denuded state forest lands. It's a big and costly job**

**Vast areas once logged or burned are now stocked with young trees. Future timber sales should bring Oregon a fat income**



1925 to close down hazardous areas during danger periods, snags were required to be felled in active operations and operators were told to increase their vigilance in the woods during the fire season.

To encourage private forest landowners to retain their timberlands and to create a more equitable tax structure, the 1929 legislative session passed the "Forest Fee and Yield Tax Law." Cutover lands and reforesting lands could be classified under this Reforestation Tax Law. Landowners were required to pay a nominal tax of five cents an acre per year in the fir region and two and one-half cents in the slower-growing pine area of eastern Oregon during the long years until the forest reached maturity, then a yield tax of 12 and one-half percent of the stumpage value of the timber was payable at time of harvest. This law has been responsible for keeping millions of acres of private forest land on tax rolls and provides for the heaviest tax payment when the crop is harvested and sold.

By 1941 we were ready for the most important and far-reaching step ever taken in state forestry in the nation—The Oregon Forest Conservation Act. Its purpose is brought out best in the legislative statement of policy:

"The preservation of the forests and the conservation of forest resources for the equal and guaranteed use of future generations, and the protection of forest and water resources and the continuous growth of timber on lands suitable therefor are hereby declared to be the public policy of the state of Oregon."

Here was a courageous, enlightened, progressive and intelligent approach to permanent forest management at the local level. Here was legislation establishing a sound, scientific basis by which to manage one half of our total land area, our



When aerial seeding is not practical, more costly hand planting is necessary. Tillamook's rehabilitation will total 10.5 million

rich 30 million acres of commercial forests. Here was the end product of years of friendly relationship between forest landowners and their neighbors, Oregon's Board of Forestry.

Nothing like it had ever been attempted before. This act was written by men here in Oregon who knew their native forests. It provided for sound cutting practices, for the leaving of adequate seed sources on every acre or in nearby seed blocks, for handplanting where desired, and for penalty bond in case of failure to leave seed sources.

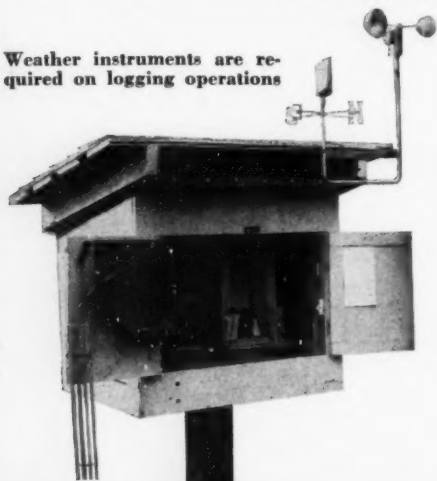
How well has this local-level, original conservation act worked? Since passage of the law in 1941, a total of 2,671,295 acres has been harvested of ripe and over-ripe timber, all under supervision of the Oregon State Board of Forestry. Of this total, only 39,606 acres have been in violation, or less than 1.5 percent of the vast harvested acreage. Even some of the area in violation has since been released because the lands have come back into new forest growth. Posted bonds of eight dollars an acre have provided cash to

replant the small portions needing it.

Timber landowners helped make the law and they are certainly co-operating to a remarkable extent to make it work. This is evidence of the workability of state legislation conceived by fair-minded citizens who live close to the forests which they know and love. If proof is needed that we can run our own affairs without outside help from the distant Potomac, then here it is in irrefutable form. Neighbors generally work well together because they know and understand each other and each other's problems.

Our state forester, with his excellent staff of 200 full-time civil service foresters, has always taken the position that the forest industry and the people of Oregon wanted to do a forestry job. Loggers frequently need advice on how best to do it and conform to state codes. There is never the attitude of the policeman, but more the relationship of expert consultant, in supervision and enforcement of the conservation act. We like this approach best, because, if we were a logger that's what we would understand.

Weather instruments are required on logging operations





Of great pride to me as an Oregonian is the way in which our timber operators have informed themselves on forestry during the last decade. Today, hundreds of our Oregon loggers and forest landowners have adopted volunteer forestry programs of their own and take justifiable pride in their own conservation work. More than two million acres of private forest lands in Oregon are now certified as Tree Farms for the perpetual growth of forest crops. As far as progressive forestry is concerned, many of the operators are going well beyond the minimum requirements of the forest conservation law.

Adopted two years prior to the Oregon Forest Conservation Act, in 1939, was the Forest Land Acquisition Law. Under the provisions of this law the state of Oregon has acquired some 725,000 acres of forest lands not suitable for private ownership, principally old burns. These state forests have been bought, received as gifts from private donors and deeded to the state by the counties or placed under state management by the counties. We are as interested in developing these state forests into paying properties as our private forest landowners are intent on making their forestry pay.

An example of what we have been able to accomplish from a business standpoint in handling these properties is best illustrated by results from the first few years of operation. The people were authorized to issue \$250,000 in bonds to acquire certain lands, most of which had been badly burned. Within less than two years' time we had retired all of the bonds issued or \$40,000 worth from earnings from the properties which were then left in perfect condition for reforestation.

The state of Oregon is now engaged in the greatest reforestation project ever undertaken by man in a single block. In 1947, the legislature referred a bond issue of \$10,500,000 for the rehabilitation of all state forest lands, which included the Tillamook Burn, (not more than \$750,000 of which can be issued in a single year) to the people of Oregon who subsequently approved it in the 1948 general election.

The 300 thousand-acre Tillamook Burn area, now principally in state forests, is being reforested and fire-proofed under a 15-year program which includes snag-felling in half-mile wide corridors to break up the fire hazard, direct aerial seeding and hand planting. Although the first of

three disastrous fires in the area burned in 1933, salvage of fire-killed timber by private owners and loggers still goes on with more than 100 logging camps operating in the burn 17 years later.

There has already been taken off the burn nearly as much timber volume as the original cruise estimates, before the fire, of nearly 13 billion board feet. The state is able to salvage much sound wood from snags which are being felled by contract and which in turn are being sold at fair market prices. This Tillamook State Forest, when restored will one day bring into the coffers of Oregon in stumpage sales in excess of \$1,500,000 a year, for every year into many future generations. Our state forestry must pay its way. That's what we believe, and it is the basis of all planning in our entire state forestry program.

Oregon is not lagging in forestry research, in developing new products from wood, in exploring the field of new uses for wood, nor are we standing still in better forest utilization, management, protection and re-

forestation. The 1947 legislature passed a Research and Experimental Tax Act which raises about \$333,000 annually from a five cents per thousand board feet severance tax on all logs cut. Sixty percent of this income goes to our Oregon Forest Products Laboratory at Oregon State College for research in wood utilization.

Our job is to do the scientific research for Oregon's forest industry. Already a number of new wood-using industries have been established to use processes we and others have uncovered. One makes a new pressed wallboard from leftovers from sawmills, another converts a high-grade wax from Douglasfir bark, still another makes chemical-free wood charcoal for the metallurgical industries, another feed molasses for cattle, and still another derives tannins and drugs from bark. The remaining 40 percent is used for field research in forest management by the state forestry department.

Under this field research program, special emphasis is given to the development of increased effectiveness  
(Turn to page 43)

**Second growth Douglasfir killed in the Tillamook fire. Nearly 13 billion board feet of timber have been salvaged since 1933**



"Merciless invader" of arid Southwest  
rangeland, the mesquite poses a stubborn  
problem of eradication. Yet it was  
highly praised by early-day stockmen

# Menacing Mesquite

By CARL WRIGHT



U. S. Forest Service Photo

Brushy thickets of mesquite and cholla make the handling of livestock difficult

ONCE a precious possession of the American Indian, the mesquite in the past twenty years has become maligned by ecologists as a merciless invader of the Southwest, particularly in those states which border the Rio Grande—Texas, New Mexico and Arizona. Regrettably, it has, indeed, become a serious problem to range owners and livestock producers in that area.

Until the comparatively recent era of greater meat production in the Southwest, ranchmen and stockmen used to sing the praises of the mesquite tree. Then the abandonment of thousands of acres in valley bottoms for grazing and the increased demand for meat caused the tree to slip from its high pinnacle and bow to scientific methods of eradication.

More than 37 million acres of grassland in Texas alone have been invaded by various species of noxious brush, of which the mesquite is the foremost menace.

Yet man, armed with mechanical and chemical weapons of modern science, has learned he has no such clear-cut advantage over this most tenacious of woody plants that he can set up a timetable of progress in its control. The ecologist must experiment with chemicals and mechanical tools in search for a thoroughly satisfactory method of eradication, while the mesquite is well entrenched with growth habits which thwart drought and flood, fire and ice. Truly, the struggle of this "fallen" tree to perpetuate itself can hardly be paralleled in the history of plants.

Today, say the range experts, the mesquite tree not only robs valuable forage grasses of water and food, but it causes an alarming amount of soil erosion. It also makes a shade in which the grasses suffer and produce a minimum of starches and sugars. Moreover, brushy thickets of mesquite make the handling of livestock difficult.

Just what is this "creeping invader," this stockman's Grendel which belongs to the botanical genus *Prosopis*? Botanists have classified (but not without confusion) the varieties of the arid and semiarid regions of the United States as *P. juliflora* var. *glandulosa*, *P. juliflora* var. *velutina*, and *P. juliflora* var. *Torreyana*, commonly known as honey mesquite, velvet mesquite, and

western honey mesquite, respectively.

The plant ranges from Chile and Brazil to Kansas, and is found in Hawaii, the West Indies, South Africa, Australia, Persia, and India. No one knows how or when the mesquite reached the Southwest; one supposition is that wildlife carried the seed from Mexico to Texas several centuries ago. Perhaps the horses left by De Soto and Coronado in the 16th century were instrumental in introducing the seed to regions of the Southwest, and later hordes of cattle on trail drives.

A gnarled shrub with little foliage on dry plains and stony ridges, the mesquite becomes a large, low-spreading tree in fertile bottomlands, attaining a diameter of three feet and reaching a height of more than 40 feet. The fissured bark is gray or reddish-brown, and yellowish-green twigs shoot from branches armed with auxiliary spines over an inch long. Frequently, due to severe freezes or fires, the tree is found in the form of sprouts, which produce many branches with slick bark.

Bipinnate leaves bear numerous leaflets, yellowish-green when they appear in March or April, but dark green before they fall in winter. The flowers, cream or greenish-white spikes, appear at intervals during the warm season and produce slightly curved indehiscent pods or beans. A clear amber gum, similar to gum Arabic, exudes from the branches. Some roots penetrate the ground vertically, growing to enormous lengths, while others spread horizontally to supply food as well as steady the plant.

Long before the mesquite encroached upon the prairies and plains to rob them of valuable grasses, it was a boon to Indian, Mexican, and early settler alike. From the beans, Indians ground a meal which was made into a porridge or mush, cakes, and a slightly intoxicating beer.

When dried and stored, the ripe yellowish pods, mottled in red, furnished a nutritious food for Apaches, Pimas, Moquis, and other tribes. The gum was eaten and also used as a treatment for sore eyes and open wounds. At least one Indian tribe was known to use the bark in making a coarse cloth and baskets. Poorer Mexicans today use the mesquite for fuel, food, and remedies.

In the 1850's, according to one observer of early Texas, mesquite wood was used "to the exclusion of every other wood for making hubs and spokes" for wagons and the "ribs and knees of small vessels." Travel-



A splendid mesquite tree, larger than average



Mesquite brush growth being checked by mowing



Testing effect of chemicals applied to the wood





Applying sodium arsenite to sapwood of a mesquite stump prevents sprouts

ers on the dry plains found that mesquite switches projecting from mounds of sand came from dense growths of roots or subterranean forests, which supplemented buffalo chips for fuel.

Used extensively for heat in the early Southwest, the wood also made durable fence posts and substantial foundations for houses and mills. Blacksmiths preferred charcoal obtained from the wood, and smelters used it in districts where coke was expensive. Also, tanning extract from the wood produced leather of superior quality.

Hexagon-shaped mesquite blocks were used for paving a street in San Antonio in 1901; the city offered wood to contractors for paving other streets, but annulled its contracts when the blocks could not be supplied in adequate quantities.

Several years later the Department of Forestry of Texas A. and M.

College made an extensive survey in thirteen counties of South Texas to determine the commercial possibilities of mesquite. The hard, fine-grained wood, varying from a reddish-brown in the heart to a light yellow in the sapwood, could be used for gunstocks and grill work and made into turned articles such as trays and plaques.

Hence establishment of mills for the production of lumber was considered feasible. More than 90 percent of the region under study, however, contained "unmerchantable" timber; logs over four inches in diameter and three feet long were not available because of tree damage through wind, insect injury and decay.

Its qualities having been known since pioneer days, mesquite gum was long considered a product fit for market. More than 12,000 pounds were gathered in one Texas county alone in 1871 and shipped East for the manufacture of mucilage and gumdrops. The University of Arizona Agricultural Experiment Station issued a bulletin in 1895 which stated that the yield of gum could possibly be increased by wounds in the bark.

According to the bulletin, the gum was highly prized in Mexico "for its medicinal qualities, the pharmacies being required by law in some states to keep it in stock." As late as 1905 an agent of the federal government (Vernon Bailey in *North American Fauna*) claimed that mesquite gum, "a much neglected product," needed "only introduction to a market to become of commercial value."

Until the turn of the century most people looked upon the mesquite tree as an asset to the Southwest. A statement in the Arizona bulletin of 1895 is typical: "... the mesquite forests already in existence are cer-

tainly too valuable for their products and their influence upon climate to be carelessly destroyed." Farmers gathered beans for stock by the wagon load during droughts, claiming that the fruit was superior to corn in food value.

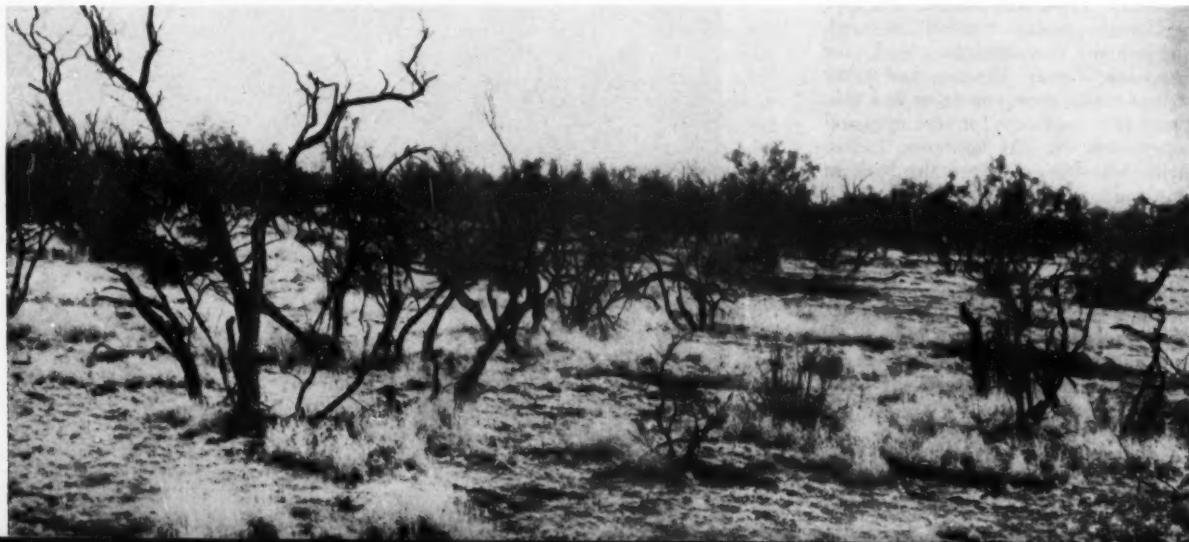
In the 1860's the federal government bought beans at three cents a pound for its cavalry in New Mexico; during the same period, when grain was scarce, the beans sold in San Antonio for a dollar a bushel. The Agricultural Experiment Station at Texas A. and M. College in 1917 conceded that the movement of mesquites from rides and mesa tops to open prairies was viewed with "some misgiving," but expressed the opinion that "no great hardship to landowners is as yet evident. The open stands of timber will not for a long time, if ever, destroy the supremacy of grass vegetation and many distinct benefits from the forest cover are recognized."

Thus prior to the era of modern range management, the mesquite received only praise because it provided nutritious forage for horses, mules, and cattle, especially during a shortage of other foods; it furnished fuel and fence posts to regions where other wood was scarce; and it offered protection against wind and water erosion.

Moreover, the feathery foliage made shade for stock, and the long roots drew underground water to the surface during droughts and supported grasses. Although most of these qualities are now attacked, and although the mesquite never became important commercially, the tree was indeed manna in a plains environment.

The story of the mesquite's attack and spoliation (exclusive of the influences of nature itself—droughts, (Turn to page 37)

Mesquite killed by kerosene. Spray must penetrate six to eight inches deep around the taproots



First in a series of Davy Crockett tales steeped in Bunyanesque which reflects logging camp esteem for a real life hero. They are expertly re-written from an Almanac of 1840



By JAMES STEVENS

## Davy Crockett's Cougar

**M**Y first job in the woods was in 1904. I was twelve and husky enough to swamp for the logging teamsters and to offbear and pile from the little planer. Uncle Ben Cotter owned the mill outfit. It was powered by a steam threshing machine engine. My rate of pay was 50 cents for a ten-hour day—and board.

The place was the pines of Southern Idaho. The Cotter camp was away up Mann Creek, in the green of Mt. Hitt. It was a land of wildlife. Deer were many and the cougars lived well. One of my hopes in the life of camp was to hear a cougar howl its deathly cry.

"The most terror-striking sound on God's green earth," asserted Uncle Ben Cotter, who had come to Idaho in the 1850s, and had fought under Howard on the trail of Chief Joseph. He had been a friend of Jim Bridger's, too. "A cougar hates to howl for fear he will scare himself to death. It has happened. Jim Bridger and I saw it happen three, maybe, four times. I jist forgot."

He told me that Davy Crockett was the greatest cougar-killer of all time.

"When Davy came west he invented a trick of *making* a cougar howl," Uncle Ben said. "It was his way of killing cougars—*make* 'em howl. Suicide it was, plain and simple suicide."

I know he was laying it on, of course, but Uncle Ben's talking did

not fail to whet my appetite to hear the howl or scream of a cougar in the mountain midnight air. All I got, however, until the end of summer, was Davy Crockett stories of the western forests. I didn't know at the time that Uncle Ben was working over stories of Crockett on the Mississippi, in Tennessee and Texas, which had been popular back in the 1830s and '40s. Davy Crockett was a real man—even a real Congressman, I later learned. But as I heard about him and the cougar from Uncle Ben Cotter I thought it was a tall tale about an imaginary hero.

One stormy morning, Uncle Ben told, Davy Crockett took a stroll for about ten miles in the timber. As it was simply to pick up an appetite, the only weapon he had along was a prod used to part the brush. He'd hit off about eight of the ten miles in a half-hour and was popping a morsel of sweat, when he tromped through a stack of blackberry.

He pranced on, enjoying the sound of the inch thorns busting to flinders on his iron hide, humming a tune to go with the music, all so innocent, when he fetched up spang in the mouth of a monster cave. Next thing he was standing knee-deep in skulls and bones and staring into the blazing eyes of the strappingest and hungriest looking stud cougar he had ever laid an eye on.

This cougar was no turn-tail. He sat tight, lashed his tail, and grinned

as much as to say, "Yours are next—your bones, I mean." Then he showed his teeth, ran his tongue over them, smacked his lips, opened his jaws again, and growled like a rock-crusher.

Davy Crockett stood within three paces of the cougar. He showed his own teeth and tushes to the timber beast and growled right back at him. They both kept that exchange going for a spell, the cougar telling Davy Crockett that he was the big eater of the forest, with a stomach like a pulp mill and a disposition like dynamite. Davy told the stud cougar he was a fiery furnace of hunger in his stomach, and would eat him first and fry him later.

Neither Crockett nor the cougar was fooling. Right soon it was a battle.

There was nobody around to see the conflict. Davy Crockett was the only one who could ever tell about it and such a modest man as he was, he covered up his own great deeds in the telling.

Davy took a warmup gnaw at his club, or prod, making the fire fly at every crack of his tushes. To the cougar that was an amazing sight, and Crockett a man. But the cougar did come on. His tail lashed up and the air screeched. He lashed it down and the earth shook and gravel flew!

It was lucky no trees were nigh as the cougar swiped his tail from

(Turn to page 45)



Gaunt, gray trees stand as stark evidence of successive attacks by the gypsy moth caterpillars

## Quick Death for the Gypsy Moth



Massachusetts is leading in the battle to eradicate a most damaging forest defoliator. DDT spray is the weapon

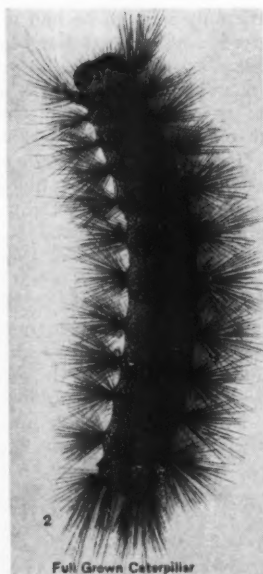
By JOHN L. F. KING

A NEW objective in man's centuries old war on insects, the complete eradication of the most damaging forest defoliator in the northeastern United States, is the goal today of an accelerating campaign.

The pest is the gypsy moth, brought from France in 1869 by a scientist in a fruitless attempt to cross it with the silkworm. It was liberated accidentally in the course of an experiment. The agent of destruction is DDT, sprayed by airplanes at rates of one-half to one pound an acre.

Massachusetts, under a county by county program initiated in Cape Cod, is leading the way. In two years nearly 650 thousand acres have been sprayed, completely protecting woodlands and brushlands of Barnstable and Plymouth counties. Together these segments of ancient Plymouth Colony comprise more than half of the hotbed of gypsy moth infestation in the United States.

Far from this hotbed, on the southeasternmost front of the penetration of the pest inland, a similar program



2

Full Grown Caterpillar

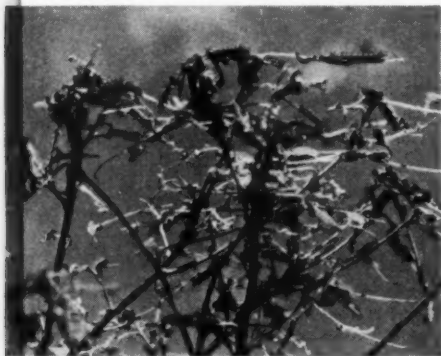


has been carried out in Pennsylvania. First tests of DDT on gypsy moths were made there, and the results not only inspired Cape Cod's attack but have quickened the war throughout the nine-state area of infestation.

"At the end of four years, not a single living gypsy moth has been found on any part of the 315 thousand acres treated with DDT." Milse Horst, secretary of the Pennsylvania Department of Agriculture, said.

Entomologists, agriculturists and conservationists representing these nine northeastern states, meeting in Boston last year, adopted resolutions directed to the federal government and the several states and aimed at "the eradication of the gypsy moth," and urging "a completely coordinated program for gypsy moth eradication." Until then, few had been bold enough to talk eradication. Hitherto they have had to be content with control.

The caterpillars emerge in May, feed voraciously on the foliage



Several factors make that goal seem not only possible but practical. DDT, sprayed in oil, acts like an atom bomb on caterpillars. Within a minute after it hits they fall like rain from the foliage, writhing in the death throes of paralysis. Aerial spraying of large areas costs only about one dollar an acre. Hydraulic spraying costs \$25 an acre or more and ground rings cannot penetrate and spray forests.

Trapping, which costs only a cent an acre, affords practical means of detecting any colonies missed, or new infestations in sprayed areas as well as in new areas. It makes possible an efficient and economical mopping-up program for whatever time is necessary after spraying.

Two factors worry entomologists. The greatest danger is that, once the big infestations have been wiped out, men will grow careless and let the

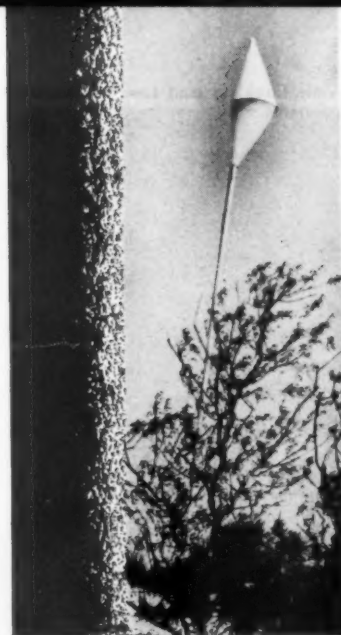
campaign drop. "Complete eradication of all infestations, whether heavy or light, is the only way we can avoid the heavy annual expense of control operations we have had in the past," Harold L. Ramsey, Chief Moth Superintendent in the Massachusetts Department of Conservation, declares.

The other factor is that of time. Insects, like all else in nature, exhibit an almost miraculous ability to build up resistance against enemies, even poisons. DDT was used with startling effectiveness against mosquitoes in Florida, but after five years they became remarkably resistant. More and more DDT is required to kill them, and as dosages are increased, other wildlife immune to light applications become susceptible. Laboratory tests with flies prove that they, too, after many generations, become practically immune.

A mere hundred dollars would have wiped out all the gypsy moth caterpillars in America immediately after the first ones escaped at Medford, Massachusetts in 1869. Leopold Trouvlot, the scientist, had put them on shrubbery to feed, covered with a cloth to prevent escape. A sudden storm whipped off the covering and spread the caterpillars about.

Well knowing the danger, the scientist appealed to the town's selectmen for aid. They refused funds. Twenty years later, when the Massachusetts General Court was forced to take action, a million dollars proved inadequate. By 1949, when "Operation Big Squirt" was initiated on Cape Cod, Massachusetts municipalities and the state had spent more than 30 million dollars in what at best were only piddling efforts at control.

In southeastern Massachusetts the pests found conditions peculiarly to their liking. Much of old Plymouth Colony had reverted to primal types of trees, including shrub oak on which the caterpillars thrived. From this hotbed the moths spread throughout New England, even into Canada.



Windssocks on light metal rods above the trees guide spray planes

They were found in New Jersey in 1920; in eastern New York in 1922; an infestation approximately 1000 miles in extent was discovered in northeastern Pennsylvania in 1932, and six years later an area of some 250 square miles in the southeastern portion of the Keystone State was infested.

These advances were made despite a barrier zone erected years before in western Massachusetts, later moved into New York, in the hope of preventing invasion of the far-flung hardwood forests to the west. Federal funds were first appropriated in 1906, a costly quarantine established that still takes large annual appropriations. Creosote, arsenate of lead, imported natural enemies all were employed, and still the battle was a losing one.

Then came DDT, but with Yankee soldiers spread out over bug infested Pacific islands, the Army and the Navy held priorities. It was 1944 before the federal Division of Gypsy and Brown-Tail Moths Control could

(Turn to page 30)

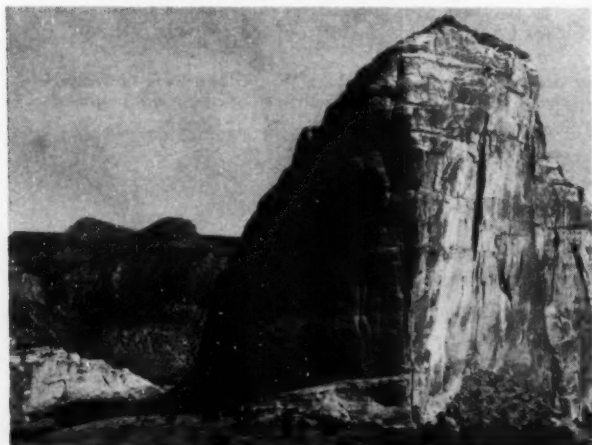
A C-47 was the first plane equipped by the U. S. Department of Agriculture for the big aerial spraying project on Massachusetts' Cape Cod peninsula



The view, looking east toward Steamboat Rock, is breathtaking



Echo Park dam would submerge more than half of Steamboat Rock



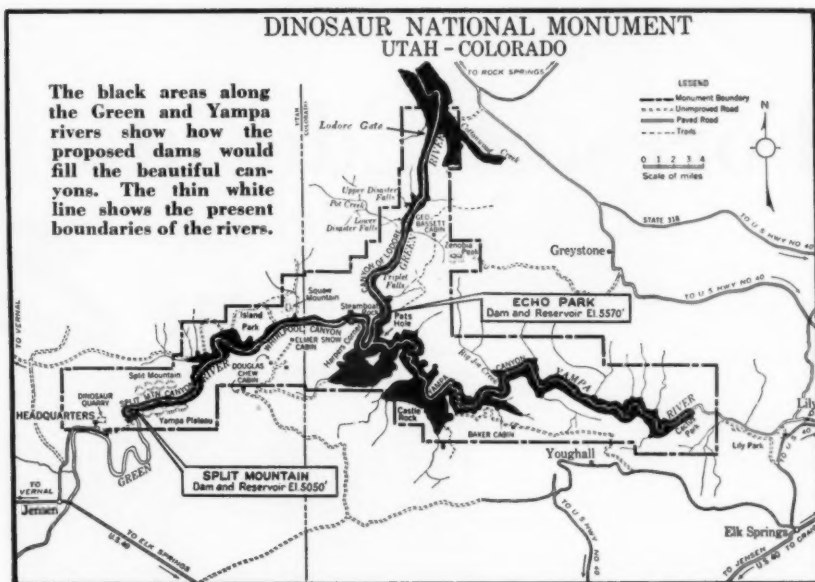
In this canyon is the proposed site of Split Mountain dam



The magnificent canyons and colorful, rugged rock formations portrayed on these pages extend along the Green and Yampa Rivers within Dinosaur National Monument. Straddling Colorado and Utah, this breathtakingly picturesque wilderness area is currently the center of a heated controversy between Bureau of Reclamation engineers and wilderness preservationists. Many public spirited groups object to despoliation by proposed power dams of an unspoiled treasure of nature supposedly set aside in 1938 for preservation

Gate of Lodore. Echo Park dam would raise river here 200 feet





## Dinosaur's Rugged Beauty

*Photos by Devereux Butcher*

as a spectacular natural exhibit of scenic grandeur.

Specifically, two power dams—one at Echo Park on the Green River just below its juncture with the Yampa, the other in Split Mountain Canyon near Monument headquarters—are being proposed by Reclamation engineers, in fact, have already been sanctioned by the Department of Interior. But they haven't been authorized by Congress, and won't without a full scale fight from the opposition.

In effect, the Echo Park dam would

inundate some 500 feet of majestic Steamboat Rock, leaving little more than a peaked promontory above the floodwaters. Split Mountain dam would doom to a watery grave all the beauties of Rainbow and Island parks, Whirlpool Canyon and other of nature's wonders. Dinosaur National Monument as a spectacular scenic attraction would cease to exist. More important, construction of these dams would set a precedent for building others in National Park and Monument areas. Glacier National Park, Grand Canyon and Mammoth

Cave are at present threatened with inundation by dam building.

Granting the need for dams to serve the people of Colorado and Utah, guardians of Dinosaur point to alternative sites outside the Monument area. It is contended one group of three—Desolation, New Moab and Bluff—would provide more power and storage and cost \$60,000 less than would Echo Park and Split Mountain dams. Barring a retreat on the part of the engineers, we haven't heard the last of this issue.

feet,



George A. Grant Photo, National Park Service  
Majestic Yampa Canyon, a mile east of the Green River



# Forestry Education

in *Europe*

Old World methods of forestry education are discussed here  
by an American professor who visited Europe's major schools

**M**ETHODS of teaching and curricula to be followed in forestry education are always good topics for debate, and probably the most heated arguments on the subject arise among the forestry "educators" themselves. It could hardly be expected, therefore, that I, an American engaged in teaching forestry, would see eye to eye with the methods used by European forestry schools. By the same token, the Europeans cannot be expected to agree with an American dean of forestry.

For example, I think a dean is rather an important individual. The European foresters don't. All the emphasis with them is on the "Professor." I rather suspect that in their evaluation of deans they will get a lot of support in this country.

When European schools are compared with American forestry schools, both accredited and non accredited, I believe the European schools stack up better. However, when the comparison is limited to accredited American schools, the scales tip in the other direction. Accredited schools in the United States turn out 95 percent of the American foresters, and as a group these schools measure up better than the European. This is overall and not a comparison of

By J. LEE DEEN

individual schools. Schools in Sweden, Finland and certain other countries are equal to or better than any in the United States.

Right now let me digress to say that the warm hospitality of all the European foresters makes an objective analysis difficult. I was fortunate in that the first place I visited was Aberdeen where Professor McNeil, a

fellow student at Yale some years ago, is on the forestry faculty. "Mac" patiently explained to me the matriculation examinations and degree examinations and other procedures used at the University of Aberdeen.

The system, with modifications, is followed pretty much throughout Europe, and I felt most fortunate to have friend McNeil initiate me. I must say, however, that I never thought I would live through it. The

Norway's mountain meadows and forests illustrate multiple land use





Sweden's forest school, Stockholm



Finland's modern forestry building



Oslo's School of Agriculture, Forestry

moisture laden winds coming in over Aberdeen off the North Sea are paralyzing in their coldness. I wager no students go to sleep in class at Aberdeen.

The strength of the European schools lies in their high entrance requirements and degree examinations. As near as I can compare them to American admission requirements, all students must be graduates from the equivalent of our high

school, and further, pass a matriculation examination equivalent to the American college boards. As college students, they must take and pass certain prescribed courses before they may "sit" the degree examinations.

Although procedure varies, one might say that the first degree examination for European foresters covers the basic subjects of botany, chemistry, zoology, mathematics and the like. The second degree examination is over the introductory forestry courses of soils, silvics, mensuration, dendrology, wood technology and plant physiology. The third and final degree examinations cover silviculture, forest management, forest economics and forest utilization.

The big advantage of the degree examination is that intense competition for grades in formal classwork is lessened. The student who loafs through a course and crams for finals is considerably handicapped. Degree examinations are comprehensive in nature and take two or more days, making last minute cramming difficult, to say the least.

European forestry schools, I believe without exception, end formal instruction and hold the final degree examination early in March. Following the final degree examination, graduating seniors spend two to three months in the field fitting together subject matter given them in the

period of undergraduate instruction. In many of the schools the final is a comprehensive working plan for a definite area. This senior field quarter is one of the strong points in the European system.

The placement problem is a very real one in most of the European schools. They seem to shake it off with less concern than even the most optimistic Americans. The French do not turn out a surplus because they restrict enrollment. The same holds true in Finland and Sweden, as near as I can determine. All the others are turning out about twice the number their countries can absorb.

Present world conditions have greatly curtailed opportunities for placement in colonies and other types of foreign service. Some look toward the United States and seem surprised when told there is little, if any, opportunity for European trained foresters in the United States. The European schools will be forced to curtail their production of foresters or else suffer the effects of a serious oversupply. I am sure I don't know the answer, but certainly they are not facing up to it.

The French school at Nancy is of special interest because the late Gifford Pinchot, was a graduate of this school, and recounted his student days there in *Breaking New Ground*. It is also of interest in that

it is run somewhat along the same lines as our service schools at Annapolis and West Point, an unusual pattern in present day forestry schools. The staff is drawn from the personnel of the Bureau of Waters and Forests. Faculty are assigned to Nancy as needed.

Monsieur Oudin, director of the school, cannot talk English and I cannot speak French, so we did our visiting through an interpreter. He told me that each year the Bureau informs Nancy as to the probable replacement needs two years hence. A competitive examination is taken by students who have finished two years at college level at either the Polytechnical (engineering) Institute or the Agricultural Institute, both of which are located in Paris. Successful candidates are selected entirely on the basis of their placement in the examination. There is no personal interview. All candidates, however, must pass a physical examination given by two military physicians.



Upstream engineering in southwest Norway helps to control erosion

Immediately upon acceptance by Nancy, the young man becomes an employee of the Bureau and is placed on the payroll. During the school terms he attends classes in Nancy, and during recess periods he is assigned to forests on a training basis. The system has much to recommend in that once accepted, the young man is assured of a living wage while a student. Probably more important, he is assured of a job upon graduation.

Switzerland exemplifies a tendency on the part of some European schools to overestimate themselves as compared to American universities. For example, an announcement from the Swiss Federal Institute of Technology states "Students of English origin who have passed the matriculation examination which admits them to the English University are

accepted (at Zurich). *Students of American origin may be reminded that the American Bachelor of Science corresponds practically to the English matriculation certificate and will be treated accordingly.*"

Yes, the italics are mine. Shades of the Golden Gophers. When I finished at the University of Minnesota I had attained only the educational level of the prep school graduate in Switzerland. We, ourselves, are much to blame for this attitude, because in dealing with foreign countries we either assume a vastly superior attitude or do a full knee bend. Naturally, when faced with a choice between these two extremes, the European is going to accept those who pay full homage.

The Swiss have been engaged in forestry for a long time. The Sihlwald which belongs to the city of Zurich has been under management for 500 years and has been earning \$10 to \$15 an acre annually for a considerable period. It is available as a field laboratory to forestry students in Zurich, and there boys learn forestry in a highly intensive form.

An aspect of Swiss forestry education which is of interest to those of us living in the Rocky Mountain region is *alpwirtschaft*, which is essentially the agriculture of mountain regions. One fourth of the Swiss land area is unproductive, one fourth is in forests, and one half is in agriculture. Of the agricultural lands, one half is managed under *alpwirtschaft*,

walls as protection against avalanches.

At Heidleberg I spent some time with the Bob Halls. Bob is in the army, and at that time was stationed in Germany. As a student, Bob sat in my silviculture classes, and now he gave the professor a tour of the Odenwald. For the first time I saw Wagner border cuttings being carried out in practice. It was quite a relief to learn that "Pop" Hawley's silviculture textbook is correct and to find out that what I have been telling students for years is actually true. Later, I was told that it was on the Odenwald that Wagner developed his system.

Before leaving the United States I had asked permission to visit Germany and was informed I must have a sponsor. I had no "connections," but mustered courage enough to ask Joe Kircher, who was in charge of forestry for military government, to intervene in my behalf. Joe arranged a trip for me which far exceeded my expectations, and when he quartered me for a week at the famous Kronberg Castle near Frankfurt, I felt I had really arrived.

The Germans are great scientists, but I had a feeling that forestry with them is too often more of an art rather than a profession. This is probably because so often they are trained to practice in a limited area, whereas in the United States our foresters receive a broad training preparing them for positions anywhere in the United States. Their



Meadows in the Bavarian Alps are kept free of livestock

forestry's responsibility being an attempt to control avalanches. Trees will grow on many of the slide areas, once stabilized, but first it is often necessary to build concrete retaining walls. Mountain homesteads sometimes have concrete deflecting

outlook, too, is somewhat different from ours.

Near Kassel I was out with a German pathologist, a well rounded, jovial individual who exemplified what many of us consider the typical  
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# Prayer Trees of the Southwest

By DOROTHY GRAY GUCK

**Cattlemen of the Southwest like their religion simple.**

**They prefer a Prayer Tree's shade to a hard church pew**

SINCE early Biblical days, trees have been cut and hewn into logs to build fine cathedrals. Eleven years ago, cowboys of the Southwest, searching for the simplest, yet finest of all cathedrals, chose a living tree as their temple of God. The green boughed roof, grama and tobosa grass floor, choir loft inhabited by nature's ablest songsters, and plain rock pulpit atop a mountain mesa, formed the first church of the cattlemen.

In many portions of the Southwest the ranchers lived so far from communities providing religious services

that they seldom heard the words of a preacher or joined their fellow man in the singing of a hymn. The cattlemen hungered for the companionship of neighbors. He longed to sit and chat about the condition of his range and his cattle with the fellow who lived on the other side of the mountain. He wanted to squat around the campfire as he used to in the days before the West was fenced and hear old Joe sing the hymns his mother used to know.

So the cattlemen decided there was no reason on earth why he and his neighbors couldn't camp together for

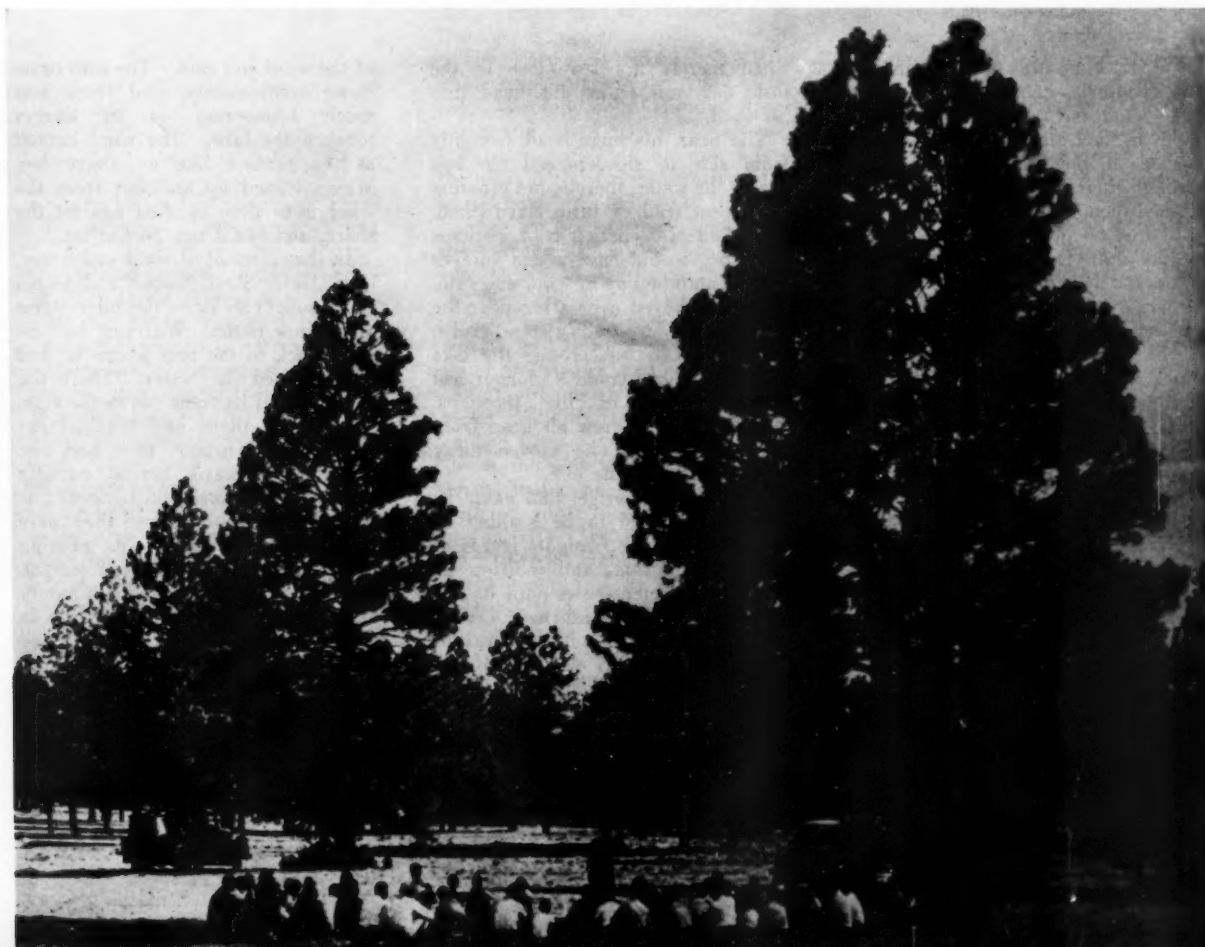
a few days each year eating chuck wagon meals, singing under the stars, and treating the family to the good preaching of a minister.

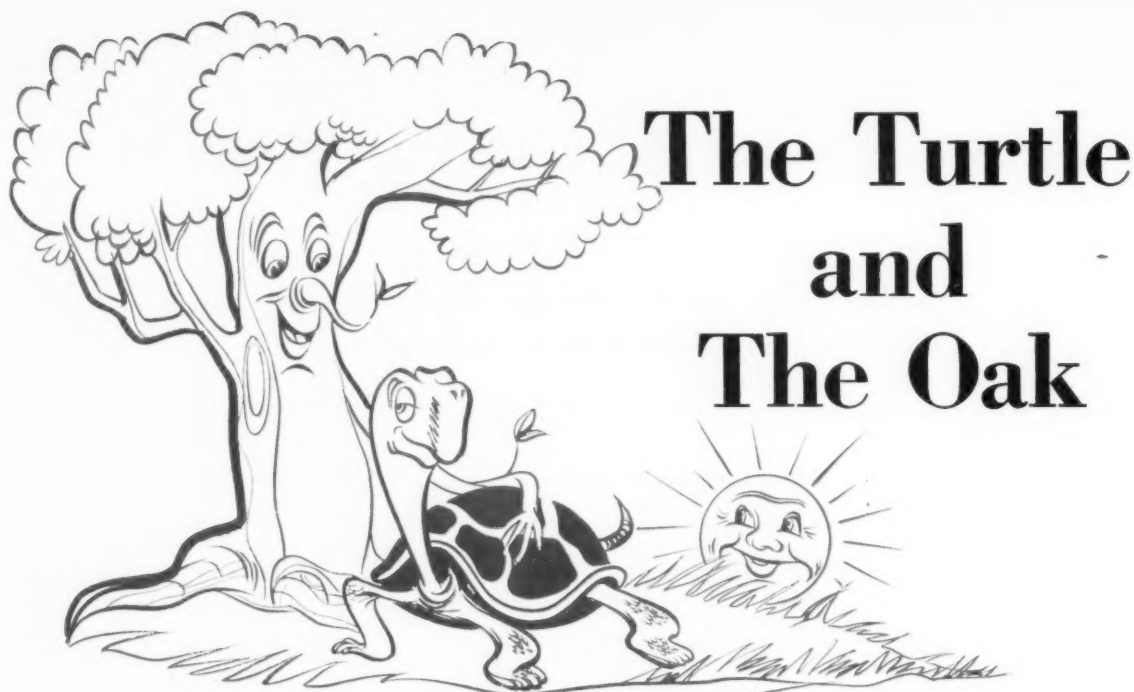
Thus the ranchers of Lincoln County, New Mexico gathered to choose the place of their Camp Meeting, that summer in 1940. Someone had suggested Nogal Mesa as a good campground and church site. The U. S. Forest Service owned all the land on the Mesa.

Gordon Gray, forest ranger at that time, told the stockmen, "I'm sure the Forest Service will be glad to let

*(Turn to page 44)*

**A ponderosa pine serves as the cattlemen's Prayer Tree at Montosa, New Mexico**





By EWART A. AUTRY

A delightful and moving chronicle covering the two-century life span of Hard Shell and the oak. It will make you think

**T**HE time was more than two centuries ago. It was a day of wind and rain in the tree clad valley of the Little Tippah. The wind pushed at the trees and screamed through their branches, and the rain washed them from twig to root.

In this turmoil of wind and rain, a tiny hard-shelled turtle crawled across the floor of the valley. He was no larger than a man's pocket watch, and was not long from his birthplace in the sands beside the river. Instinct was sending him to a small land-locked lake at the foot of the hills. It was sending him to a place where his span of life was to be measured not in terms of weeks nor months nor years, but more accurately in terms of centuries.

Hard Shell's journey was without event or danger until he was within 20 steps of the lake. Then a hunting bear approached around the shore. The vibrations of his tread reached the turtle just as he was crawling beside a small oak. There was safety in the water ahead, but creatures whose lives span the centuries are not usually endowed with the urge of haste nor the essentials of speed. At the vibrations of danger, Hard

Shell merely crawled close to the little oak and pulled his head into his shell.

The bear, his huge head swinging from side to side, passed ten feet nearer the water, thereby not crossing the recent trail of little Hard Shell. If he had crossed that trail, perhaps this story would have ended forever on that autumn day of wind and rain. The bear shoved over a log near the turtle, and devoured a few grubs. Then he moved on around the lake until Hard Shell could no longer feel the vibrations of his footsteps. Slowly the turtle drew his head from his shell. Slowly he moved away from the foot of the oak.

But let us not forget that oak. It, too, was destined to be a thing of long life, pushing forth its leaves at the call of spring, and wearing its mantles of winter snows until its life was measured by centuries. Let us remember it because its life was to be forever entwined with the life of the little hard shelled turtle which had sought safety beside its roots.

Hard Shell tumbled into the lake and floated for a few moments like a small chip. The water of the lake was moved that day by the touch

of the wind and rain. The rain came down continuously, and there was much whispering as its fingers touched the lake. The wind lunged at the surface like an angry foe. Waves leaped up and ran from the wind until they swished against the shore, and could run no farther.

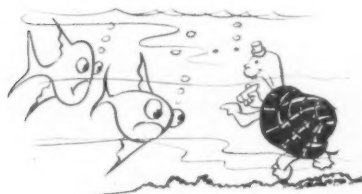
In that turmoil of wind and water, little Hard Shell floated and swam as he sought to know the boundaries of his new home. Weary at last, he came back to the spot where he had first touched the water. There the oak had sent its roots out to the lake. A mass of them had touched the water at its surface, then had run two feet outward before curving suddenly downward and backward as if hurrying ashore before they were drowned. The turtle was nearing these roots when a large catfish swam up from the bottom with mouth wide open. Being more agile in water than on land, Hard Shell reached the shelter of the overhanging roots. There was a swirl of water as the catfish made a quick turn and swam disappointedly away.

The overhanging roots became a permanent refuge from danger, and a daily resting place for the little

turtle. There was little danger for him in the lake except from marauding catfish, and even they never sought him unless other food was scarce. The chronicles of his days in the lake would be much the same. He sought grubs and insects along the shore. When some creature of the lake died, Hard Shell's nose told him the story and led him to the place of death. The day of death for others in the lake was a day of feasting for the turtle.

Not all of the hours of his days were spent in the search for food. There were hours of his younger days when he cavorted with the schools of minnows, floated idly on the surface or sat quietly on a log in the sunshine. In the cold grim days of winter he burrowed into the mud behind the roots and slept. His waking hours were untroubled by worries, and his sleeping hours untroubled by dreams.

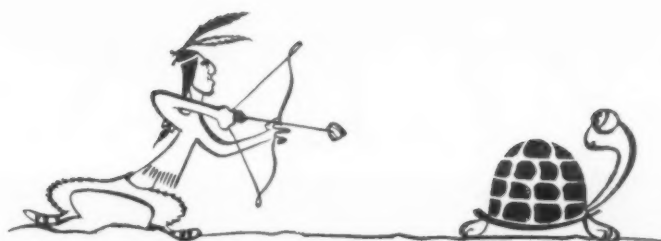
The days became weeks and months and years, and Hard Shell grew in the land-locked lake at the foot of the hills near the swift flowing waters of the Little Tippah. He grew until he was the size of a dinner plate. He grew until he was no longer afraid of the catfish, nor of any other living thing in the lake. When he was no longer afraid, he became a thing



of evil and preyed viciously on the other creatures around him.

He no longer cavorted with the schools of minnows, but sat on the bottom like a sinister shadow and snapped them up as they passed by. Though slow of body, he was possessed of uncanny speed of head and neck. Not even the huge catfish drew near him. One lightning stroke of the head with its sharp teeth was enough to tear gaping wounds in their bodies. He was counted the friend of nothing and the enemy of everything that lived in the lake.

The oak, though, remained his friend. It grew as he grew. It, too, became relentless as it became strong. Its roots sapped the strength from the smaller bushes around it, and its limbs shut out the sun until they died. Its roots became very strong where they were cast into the water,



and made a solid wall behind which Hard Shell could lurk or drag his prey. Its limbs spread out over the water. In summer caterpillars made webs among its leaves. When the wind blew, the tree shook them down, and they became a great feast for the turtle.

Hard Shell was larger than a dinner plate when Swift Eagle, the warrior, chanced to walk beside the lake one day. He had walked far, because the pots of his wigwam were empty, and he sought food with which to fill them. His hunt had not been good that day, so his moccasined feet moved more softly when he saw Hard Shell sunning on the shore. The meat beneath that shell would give the pots a sweet odor for a little while, and the shell could be used for many things. It could be used as a water pail or a dish, or it could be broken into many pieces and its jagged edges used to scrape the meat from the skin of the deer.

The need was great, so Swift Eagle crept softly to the trunk of the oak. Carefully he fitted a flint-tipped arrow and raised his bow. He leaned against the oak, and his aim was at the head of Hard Shell. Perhaps that would have been the end of the turtle had not the wind come up and shaken the oak and spoiled the aim of Swift Eagle. His arrow struck the top of the shell and glanced upward to land at last on the opposite shore of the small lake. Hard Shell went into the water unharmed, and sent a school of minnows scurrying away as he swam to his hiding place behind the root of the oak. Swift Eagle looked for a moment in the direction his arrow had gone, then walked away with no effort to retrieve it.

That was Hard Shell's first experience with Man. He had glimpsed Swift Eagle just as the arrow was released, and had felt the impact of the arrow on his shell. Though not understanding what had happened, the turtle connected the blow on his shell with the man at the oak. He never forgot that experience. He never forgot the place at which the man had stood. He never crawled to dry land again without first carefully

surveying that spot. He never sat in the sun without an occasional look in the direction of the oak. Though he watched it day after day, he was destined to have only two more experiences with Man in all of his long life.

Samuel Wayne was hunting one day in the bottomlands of the Little Tippah. His clothes were of deer-skins laced with toughened strips from the hide of a raccoon. His weapons were a knife and a time worn musket. His hunt was not one of pleasure, but of necessity. There must be meat for his cabin and skins for more clothes. So Samuel Wayne walked the valley of the Little Tippah in search of the necessities of life.

He was nearing the foothills when he heard the distressed cry of a duck, and the frantic beating of wings on water. With musket in readiness, Samuel moved silently toward the sounds. He would not waste precious powder and shot on a duck, but perhaps it had fallen prey to some large animal which would merit a shot. It was thus that he came upon the lake of the turtle and the oak.

He had not quite reached the oak when he saw the duck's head just above the water. It was crying piteously, and the water beneath it was in a whirl. As Samuel watched, the head disappeared and he heard the cries no more. Puzzled at the strange fate of the duck, he took shelter behind a bush and watched the lake. In a few minutes he saw a movement in the water near its edge, and in another moment, the huge head of a turtle appeared over the bank. The turtle seemed to be looking directly at him, but he was well screened by the bush. After a minute of waiting the turtle crawled slowly to the top of the bank.

Samuel Wayne held his breath in amazement. Never in all of his life had he seen a turtle of such great size. He estimated that it would surely have weighed all of 75 pounds. Samuel thought for a moment of the great mass of edible flesh beneath that great shell. He thought of the many uses for the shell in a cabin

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By F. M. NIER

VENEZUELA, historically negligent with her trees, today is taking drastic measures to reclaim her forestal wealth—ultimately the soil. A leading oil power, she is regarded as one of the more land impoverished nations in South America.

Coincident with the exploitation of her iron resources which portend industrialization, the nation has actively begun a program for conserving its natural resources. Further, she is contemplating early adoption of a land reform law comparable to that of Mexico.

Citizens, suffering from inadequate drinking water in Caracas and other metropolitan centers; officials, confronted with costly soil deposition on the Maiquetia Airport which serves the capital; and farmers, watching their farms and livestock wash down the gulleys of the Mototan and Apure rivers in flood seasons associated these effects with balding watersheds. They demanded and are receiving action on the growing forestry problem.

The problem is not new. It dates to the Spanish Conquest when the conquerors learned to avoid malaria of the lowlands by living in the highlands. Venezuela has been and remains largely a nation of cliff dwellers.

Approximately 1,500,000 *conu-*

Left, a stand of mahogany. Below, mixed mahogany and cedar lumber



# VENEZUELAN

## Forest Resources

**A leading oil power, this South American country is at last taking firm steps to reclaim her forestal wealth**

*queros* (itinerant farmers) continue patch-farming policies. They hack about two acres of land, hanging precipitously from some cliff, into machete cultivation—thereby accelerating erosion by man-made gulleys. Officials report that 70 percent of the population living in the 13 percent mountainous region is practicing extensive agriculture on sub-marginal slopes.

In addition to using the forests for food, *conuqueros* use them for fuel. Trees are cut indiscriminately for "carbon" or charcoal—for both kitchen and industrial purposes. Quantities of this fuel are used even in Caracas. Hardwoods which burn for a long time, such as the Roble and Caro Caro, are preferred for this purpose.

The *conuquero*, a poor man by virtue of his itineracy, can afford only a poor man's cow—the goat. But the goat has proved to be a rich nation's menace. Recognized as a plague after reducing the Maiquetia airport, the Tacagua area and other forest-bearing regions to cactus country, the goat has been brought under restraining influences of the law in the Federal District. The capricious animal has been restricted to corrals following a mass-purchase for government slaughter. However, cabrine migration to Mirana, Trujillo, Falcon,

Lara and North Zulia states promises to become a menace unless fencing and grazing campaigns, inaugurated in the Andean region, are spread more rapidly than the goat increase.

Cattle grazing, confined to large operators, also presents a forestal menace. Its problem is one of effect rather than causal, and is strongly correlated with that of timber exploitation. Once timber operators remove themselves from an area, *conuqueros* invade the region due to easy access by makeshift roads. When *conuqueros* withdraw, following the customary two-year cultivation, range owners clear wide swaths of the penetrated land by means of fire.

This constitutes the initial step in reducing rich forests to savannahs. Once opened to grazing, the area must be burned back annually to keep the degenerating "regeneration of brambles" from usurping the grazing land. Also, fire is necessary to keep offensive brambles from pricking the noses of cattle. Flames, however, destroy the organic content of the soil and explain to some extent, officials state, why produce cultivated on such lands is deficient in nutrients. It also explains, they say, why undernourishment is so prevalent.

Although control measures have been effected, fire still remains the number one forestry problem of

Venezuela. Officials are inclined to be sympathetic with fire as a means of land clearance. Others, nevertheless, point out that of the 724 fires brought under control in the Federal District and the State of Miranda for 1947, 75 percent were attributed to *conuquero* origin.

Regeneration early reclaims the *conuquero* patch, officials stated in casual dismissal of the problem. But that was before foresters, employed by the Venezuelan Forestry Department, made findings to the contrary.

The foresters first made extensive studies of fire effects on regeneration on four plots of land having varying degrees of exposure to fire. These plots, the foresters pointed out, showed that when fire penetrated old forestry sections, the intense heat irreparably damaged surrounding growth and transformed the vegetation and climate accordingly.

Recognizing these multiple problems and realizing there is no better time than now to start corrective measures, the Venezuelan government has attacked the situation on five well-defined fronts. First and foremost is that of the Forestry Department.

Simultaneous with the creation of a Department of Agriculture (1936), the nation established a forestry  
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**Saqui saqui logs being hand sawn into lumber in the Venezuelan state of Barinas**



**Mahogany logs on the way to the mill. Lack of transportation limits lumbering in Venezuela**



# Adirondack Pack Basket



**T**HE Adirondack pack-basket, like the Adirondack guide-boat, is fast becoming a collector's piece. It is bowing to the jerry-built article of today just as the boat has seen its fate sealed by the metal and powered craft. The demand for originals of both articles is far greater than the remaining skilled craftsmen can supply.

Yet the woodsman will tell you that when his time comes to cross the River Styx he wants to be ferried over in an Adirondack guide-boat and have an Adirondack pack-basket on his back for the hike down the last trail. Like the guide-boat, the pack-basket bears testimony to the ingenuity of the inhabitants, Indian and white alike, of the region. As the boat is the light truck of the Adirondack waterways, so is the pack-basket the general carry-all of the woods.

Such a commonplace object as a basket has missed the recording pens of historians. Only after most exhaustive research has the origin of the Adirondack pack-basket been attributed to the Indians—the Abenakis—surviving descendants of the

By **ROLAND B. MILLER**

Rogers' Rangers raid on their people at St. Francis. If anything were to be given back to the Indians of New York State, credit for the origin of the pack-basket should belong to them, for it is definitely a product of their craftsmanship.

Hunters, trappers, fishermen and guides agree with the Indians that the Abenakies were the first in the section to make real Adirondack pack-baskets. A theory that the basket evolved in the Highlands of the lower Hudson with the charcoal and iron mining industries and followed the northward trek of the latter to be adapted for general utility work after iron mining vanished is not quite plausible.

The baskets of the charcoal burner were flat and larger; capacity of a pack-basket would not have served their purpose, according to the word of an experienced charcoal burner. Still alive to refute other spurious claims is a chieftan of the Abenaki Indians, Julius Paul Dennis of Old Forge. It was on his state reservation that the pack-basket was originated,

replacing the Canadian and New York sumpline pack for carrying the tribal articles. With modesty characteristic of this peace-loving and industrious tribe, the chieftain has praise for the skill of the early whites who also were weavers of the pack-basket.

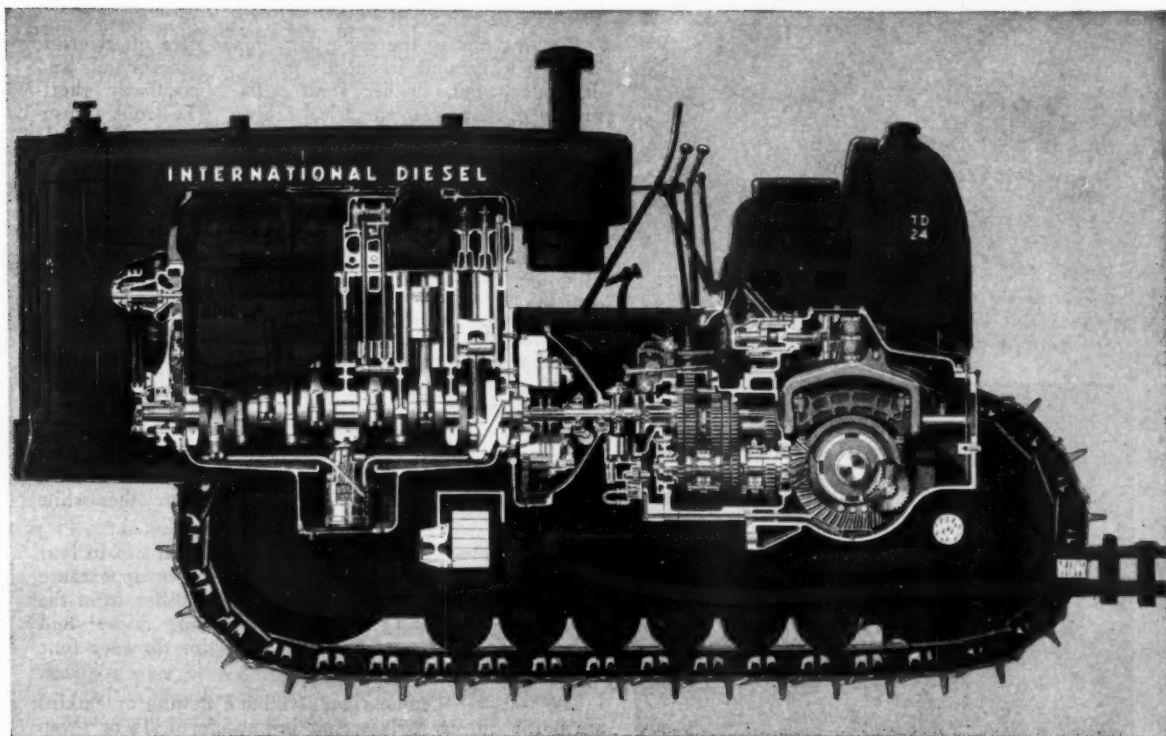
The pack-basket came into being at about the same time as the guide-boat. Until other means of transportation extended beyond Blue Mountain Lake, Mitchell Sabattis, of Adirondack guiding fame, carried the mail over the trail in a pack-basket to Long Lake.

Built to stand heavy loads and moulding itself to the back so it is comfortable regardless of hard objects carried in it, the pack-basket is superior to other packs particularly when breakable articles are to be conveyed. It is needlessly bulky, however, when only partly filled, and unless its contents are tightly wedged they will tend to shift and throw the pack off balance. Chief Dennis has taken care of this problem by putting a groove in the back, near the bottom, to keep the basket from rolling.

(Turn to page 42)



# GUTS OF A CHAMP



## Inside story of the TD-24

When two-legged people have guts, they finish the fight and do the job.

Real guts—that's what the world admires—man or machine.

You can't define what makes guts in a man, but you can "analyze" the fighting, working, dogged innards of the Champ. So let's put the X-ray on the TD-24:

**Drawbar Horsepower:** 148 working horsepower delivered at the drawbar in official tests.

**Synchromesh Transmission:** you "shift on-the-go," with eight speeds forward, eight reverse for faster time cycles.

**Instant Speed Change:** up or down one speed without declutching.

**Planet Power Steering:** all turns are easier... pivot turns, feathered turns, turns with power on both tracks.

**Reserve Torque:** gives the Champ the lugging ability to fight through temporary overloads.

**Easy Steering:** finger-tip hydraulic controls.

**All-Weather Starting:** push-button, gasoline-conversion starting—an International exclusive—gets you on the job fast.

**More Work:** the TD-24 is doing more work—with more speed and more lugging ability—than any other crawler tractor on the market.

Look it over. Then ask your International Industrial Distributor to show you what it can do for you. You'll be a TD-24 man from then on in.

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POWER THAT PAYS

*Pinus monticola*, Douglas



The tall shaft of Western White Pine reaches heights of one hundred feet or more and supports a narrow, symmetrical, pyramidal crown of short drooping branches. This open-grown tree has an unusually long crown. Frequently, more than half of the trunk is clear of branches

**WESTERN WHITE PINE**—the silver pine of the Northwest, is native to the region from southern British Columbia across northern Idaho, Montana and Washington, southward through Oregon into California. True to its name, *monticola*, it is confined to the mountains, where in Idaho and Montana it is found at elevations of 2,000 to 5,000 feet above sea level, somewhat higher in Washington and Oregon and up to 10,000 feet in California.

Ranking among the important timber trees of America, Western white pine frequently grows in dense stands and develops a tall, slender shaft with a peculiarly short-branched, narrow, symmetrical crown. The trunk is usually clear for a half to two-thirds of its length, has little taper and the slender drooping branches seldom extend more than twelve to fifteen feet. These trees may reach heights of 175 feet and be eight feet in diameter at breast height, but they are more often ninety to 110 feet high and two to three feet in diameter. Rapid growth is combined with long life, for trees of 200 to 500 years are not uncommon.

The silvery gray bark sometimes takes on a tone of purple and is broken into small oblong or rectangular blocks. Trees exposed to the wind become distinctly cinnamon in color. Even on mature trees the bark is seldom over one and one-quarter inches thick, while that of young trees and branches is thin, smooth and bright gray. Very young twigs and shoots are covered with a fine reddish down, which helps distinguish this tree from other white pines.

The pale bluish green leaves or needles are two to four inches long, commonly with a white, frosty appearance and are borne in bundles of five. They differ from the needles of the Eastern white pine in being thicker and more rigid. They persist on the twigs for three or four years or even longer.

The yellow pollen-bearing, staminate flowers or catkins are borne during early spring in clusters of six or seven on the lower branches, while near the ends of the high branches are pale purple ovulate flowers on long stalks. From these higher blossoms develop green or dark purple cones which first stand erect, becoming pendulous by the close of the first season. By the end of the second summer they turn a yellow-brown and mature to a length of six to ten inches—or occasionally eighteen inches. The slightly curved cones are longer than those of Eastern white pine and so slender as to give rise to the name "Finger-cone Pine." Trees seldom bear fertile cones before forty to sixty years of age, and then infrequently at intervals of two or more years. Under each cone scale may be found two pale red-brown seeds about a third of an inch long attached to a narrow membranous wing from three-quarters of an inch to an inch long. The seeds are shed in September and October soon after the cones ripen and may be carried by the wind several hundred feet from the parent tree. Buried in the duff and well shaded, the seeds retain their vitality several years. Over most of its range the tree reproduces sparingly and the seeds germinate best on exposed moist mineral soil, or on humus which keeps moist through the growing season. Many of the existing stands of white pine came into being as even-aged forests following the forest fires of 1889 and 1910, from seeds stored in the duff or released from cones that escaped

destruction. Seedlings and young trees will endure shade, but as the tree becomes older more and more sunlight is demanded.

The pale brown to nearly white wood weighs only twenty-four to thirty pounds to the cubic foot, is straight-grained and easily worked. Although not strong, it is harder and stronger than Eastern white pine and for many purposes compares favorably with cypress, any of the spruces and Douglasfir. Its high commercial value is attested by the fact that among the species with which it is associated few command a higher price. With an estimated total stand of about 17,000,000,000 board feet of merchantable timber growing on some three million acres, the total lumber cut in 1946 was 261,514,000 board feet. The peak of production was reached in 1937 when the cut was approximately 563,000,000 board feet. Idaho has stands of about 12,000,000,000 board feet, and Washington about 2,000,000,000 board feet. These two states with Oregon and Montana are practically the sole source of this timber. Stands of 20,000 to 40,000 board feet to the acre are not uncommon, while a large area in Idaho yielded 40,000 board feet to the acre at 100 years of age, and another area about 150 years old cut 51,000 board feet to the acre. It is used widely for structural purposes, window and door frames, molding, matches, and pattern stock.

Western white pine develops greatest size and highest economic importance in deep porous soils on gentle north slopes and flats in northern Idaho and Montana. It seldom grows in pure stands and is most frequently associated with Western hemlock, Douglasfir, the several western firs and lodgepole pine. Deep snowfall, a mean annual precipitation of fifteen inches in California to sixty inches near Puget Sound, and a comparatively short growing season characterize the regions where this pine grows.

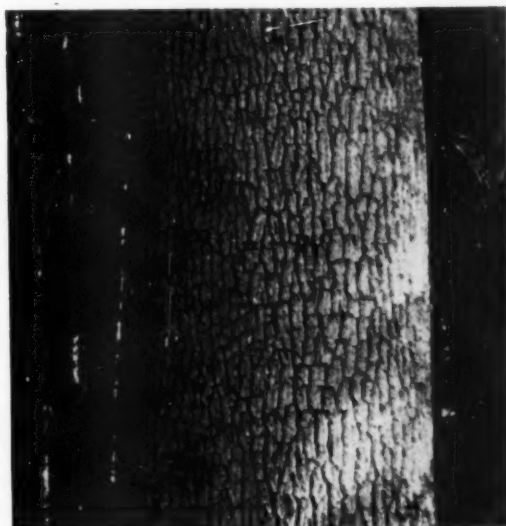
While subject to disastrous losses from fire, protection against which is essential, its most dangerous enemy is the white pine blister rust. This fungus disease, first reported on the West Coast in 1910, has made serious inroads upon scattered stands of young growth as far south as California. The fungus must find opportunity to live for a period upon the leaves of currant and gooseberry bushes before going over to the white pines, and cannot live where either the white pine or currant-gooseberry hosts are absent. Accordingly vigorous efforts are being made by the federal government, supported by the states and private landowners, to control the disease by destroying all the bushes in localities where the white pine is of commercial value.

The mountain pine bark beetle, *Dendroctonus moniticolae*, is the principal insect enemy and causes losses amounting to thousands of dollars each year. Control can be secured by felling the infected trees, peeling the bark and burning it. It is subject also to other pests common to Eastern white pine, but no others are of special significance in its natural range.

David Douglas, the Scottish explorer and botanist, first reported Western white pine on the slopes of Mount St. Helens in Washington in 1825. Soon after, seeds were sent to England, where the tree grows successfully. Because of its extreme hardiness, attractive color, compact pyramidal form and rapid growth during the first years, it is highly desirable for ornamental purposes. Not only is it widely used on estates and home grounds in the northwestern states, but it has proved hardy in New York and as far north as Ottawa, Ontario.



Pale bluish green needles in bunches of five and slender, cylindrical cones six to ten inches long are characteristic features of this pine



The bark is sharply broken into rectangular blocks and may vary from silvery gray to a grayish purple, or a rich cinnamon color



Natural range of Western White Pine in the United States



## Quick Death for Gypsy Moth

(From page 15)

obtain enough to test it.

Tests were exhaustive. Health departments wanted to know what DDT would do to water supplies, apiarists worried about bees, the Audubon Society was concerned about birds, sportsmen about all wildlife. They argued about "nature's balances," often unmindful of the patent fact that the gypsy moth, freed of its natural enemies when it was imported, itself had destroyed a balance and become harmful to all these things, forests as well as water supplies and wildlife.

A beehive placed in a test plot was sprayed repeatedly. In the woods of J. M. Corliss, who was in charge, it "continued to be healthy and normal." Spraying up and down a trout stream, "only one percent of the trout were killed."

Some birds died in test sprayings at five pounds to the acre. Birds were not adversely affected by strengths lethal to the caterpillars. Audubon Society observers could only conclude they benefitted through improvement of the foliage. There have been mishaps, but all experience shows that where proper precautions are observed, no material damage need be done.

Following initial tests, and with continued observation by the groups that had cooperated in them, nearly 250 thousand acres were treated in Pennsylvania and New York, and curiously enough, without attracting general attention beyond their borders. Meantime, on Cape Cod, gypsy moths were building up to one of their periodic peaks. Thousands of acres had been defoliated. The 15 towns in Barnstable County, which comprises Cape Cod, were spending upward of \$40,000 a year in pest control, largely on gypsy moths, and succeeding only in spraying roadsides.

Attractive trees and foliage are an asset, quite as much as timber, in a resort area. When Cape Cod, purely by chance, heard the first rumor of what was afoot to the west, it was interested. Inquiries brought Mr. Corliss in person to explain, and what he and his associates had to say was carried to the public in a series of newspaper articles. A Cape Cod Pest Control Committee was organized, federal, state, county and town officials were brought together in conference, and the eastern wing of a

pincers movement was brought to bear on the gypsy moth.

Initial efforts were directed at two badly infested areas, each involving parts of three towns and comprising, in all, about 8000 acres. Bids were sought, a contract let, and the areas sprayed. It was a complete success except for one thing—all around the sprayed areas caterpillars fed and spun cocoons, and August showed another 8000 areas as heavily infested as had been the first.

Clearly, spot spraying could not eradicate, even properly control the pest. Covering every bit of woodland and brushland in one huge operation became the goal.

New England traditions of independence and self-sufficiency made the project a formidable one. Fifteen towns had to be united, and of them, those with the least financial resources held the largest acreages of woodland. It meant a new campaign of education, months of meetings, conferences, planning.

Finally, new legislation helped clear the hurdles. By special act of legislature, the county was authorized to appropriate funds for aerial spraying, towns were permitted to appropriate and pool such funds, and the state's chief moth superintendent was given supervision over all such aerial spraying. The Conservation Department was buttressed for all-out war. Even more, after some pressure in legislature, its funds for cooperative spraying were increased.

Spray time was near before all this was accomplished and another problem had developed. The United States Army and Air Force hold more than 22,000 acres of Cape lands in Camp Edwards and other reservations. The military had to be convinced spraying was worthwhile for it. Just when all seemed lost, there entered the conferences an Air Force entomologist who had sprayed DDT on Pacific islands. The Air Force took over.

With the ink hardly dry on the emergency legislation, bids were opened, contracts let and headquarters set up in a quonset hut on the Hyannis airport. At daybreak Monday, May 16—late but still in time—a dozen planes took to the air.

Despite unusually favorable weather, with 27 good spraying days, the project was not entirely completed. Spraying was abruptly halted June

19 when it was found the caterpillars were going into the pupae state, in which their cocoons made them immune. There were left approximately 10,543 acres to be sprayed, or resprayed the following spring.

The final report, however, showed 230,923 acres sprayed at a cost, including estimated costs, of \$230,728.66. Of this the county had provided \$91,667.98; the towns \$24,349.90 in cash and labor; the state \$84,001.82, the Department of Agriculture agency an estimated \$10,700 in planes, men and other aid; and the U. S. Army and Air Force spraying estimated, on the basis of costs in the rest of the country, \$19,978.96. Salaries of project leaders and technical aids were not included.

Cape Cod's project paved the way, in legislation, methods and in the building of a unified, cooperative organization for what was to follow. Plymouth County took up last spring where Cape Cod had left off, financing its share of the cost through a \$250,000 bond issue and spraying approximately 450 thousand acres.

Bristol and Norfolk counties remain in the hotspot. Beyond them, through Massachusetts and the other New England states, infestations are light and scattered. There is a possibility that trapping to locate colonies, followed by spot spraying, can clean these areas, at greatly reduced costs.

Time, as the lawyers say, is of the essence. With eradication the goal, the longer it is postponed the greater the cost of interim control. Even greater than this, however, is the value of timber that can be saved annually. What it may be no one has been able to estimate, but studies by the Division of Gypsy and Brown-Tail Moths give some idea.

One report says: "In summarizing the damage caused by the gypsy moth in the New England states during the years 1924 to 1949, more than 7,984,725 acres were defoliated from 25 to 100 percent, with an average annual defoliation of 307,105 acres.

"A tree defoliated 75 percent only puts on 25 percent of its annual growth. Oak trees growing on more than 125 thousand acres have been killed in the New England states by the gypsy moth during the past 25 years. Many trees have been killed

(Turn to page 33)

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## The Turtle and The Oak

(From page 23)

where there were few store bought utensils. He decided that the turtle would be worth far more than a load of powder and shot. The distance, though, was too far for his musket.

Slowly he crept from behind the bush and toward the oak. If he could reach the oak the range would be excellent. He was within ten feet of the oak when Hard Shell saw him and started crawling toward the water. Samuel Wayne made a hurried shot. It was too hurried. Most of the load struck the side of the oak and glanced off harmlessly. The few shot that got by the oak plunged into the dirt before reaching the turtle.

Once again Hard Shell had been introduced to Man. He had glimpsed the form of Samuel Wayne. He had seen the flash of flame and the billow of smoke. He had heard the whine of the shot and the roar of the gun. He crawled into his den behind the oak roots and sat very still for a long time. He was more afraid than he had ever been in his long life. More afraid even than he had been on the day when he had heard the twang of Swift Eagle's bow string, and had felt the impact of the arrow.

Many more years passed, but wrought few changes around the lake of the oak and the turtle. Wild things came from the woods around to taste its waters and quench their thirst. In spring, birds loved and sang and built their nests above it. On nights of autumn, when the moon was full, wild geese passing like ghosts cast their shadows upon it, and cried as they traveled with the North Wind pushing at their tails. On autumn days when the sun was bright, golden butterflies flew near its surface and saw their reflections in its mirrors as they, too, fled from the North Wind. In winter there were no songs of birds nor cries of geese nor golden butterflies. There was only silence, as if all things were asleep.

In that silence the turtle slept in his den behind the roots, and the oak tree slept on the shore. Each had grown stronger with the passing of the years. The turtle had become a hundred pounds of meat and bone and shell. The oak had become a towering giant whose head rose above the mists of the bottom lands and scanned the vistas of distant horizons. Each in his own way had become a tyrant. The turtle ruthlessly

ruled the lake. Waterfowls and small animals feared to touch its surface, and all things within it lived in fear of the shelled monster. The oak had pushed back its neighbors until they were stunted or dead. There was no grass to rear its head beneath the tree, and no flowers to give forth their fragrance.

Then there came a strange day to that lake of the oak and the turtle. At sunrise there came the hungry whine of the saw and the echo of sledge on wedge. There came the songs of men and the crashing of trees. Those sounds swelled until the wild creatures fled past the shores of the lake and on into the distance until they could hear the sounds no more.

Day after day the sounds approached until there came the day when men stood beside the great oak. They marveled at its size and strength and beauty, but their saws bit swiftly into its body, and their sledges echoed across the lake until with a great sigh the oak tottered and fell with a crash and lay still, its long life ended.

The fall of the oak shook the ground beneath the roots where the turtle sat. The tyrant of the lake drew his head within his shell and sat very still. Within him there was the fear he had known at the twang of the bow string and the boom of the musket.

Dudley Mason approached the lake on that day on which the oak had fallen. The timber cutters were gone, and there was silence in the woods. Mason carried a rifle possessed of power and speed and accuracy. His trip into the woods had a twofold purpose. He was president of a lumber company, and his men had told him of the great oak. He was building a fine new home and sought special timber for its construction. His first purpose in the woods was to see the oak. The second purpose was to try the new gun. With this in

mind, he approached the lake carefully.

Hard Shell was on the bank to catch a few of the sun's last rays. He had not dared come out until the timber cutters were gone and there was silence in the woods. He sat with his head toward the spot where the oak had stood. The view seemed strange and unreal. It was something this creature of the centuries could not hope to understand.

The oak had fallen parallel to the lake. Dudley Mason approached, not to its base, but to its top. His experienced eyes caught sight of the turtle. He steadied the rifle against a limb of the fallen oak. Hard Shell saw no flame nor smoke nor heard any roar, and neither was he afraid, for death had come on the quick wings of the bullet.

Mason saw where the bullet had penetrated the head, and was elated at the accuracy of his aim and the efficiency of his gun. He was elated, too, at the size of the turtle. He had no need for its meat, because there would be steak at his house from the butcher's. He had no need for the shell, because his kitchen was equipped with silverware and cooking utensils of stainless metals. He wanted the shell, though, because he was building a special den for himself, and it would be equipped with trophies of his hunting trips.

He examined the oak and found in it the lumber he needed for the flooring of his house. He dragged the turtle to the foot of the oak, and hurried from the woods as the sun went down. He felt that his journey had been well worthwhile. He could picture his den floored with the lumber of the oak, and the shell of the turtle, polished and shining, occupying a table in the center of the room. Little did he think that he had slain that day two of the living products of the centuries.

Dudley Mason gave a party on the





day his new house was opened. His bejeweled guests marveled at its beauty as they trod its oaken floors. They tramped at last to the den and stood around the oaken table which held the shell. They touched the polished surfaces of the table and the shell. They murmured in admiration. Their admiration, though, was not for the oak which had produced the floors and the table, nor for the turtle which had produced the shell. Their admiration was for the man who had brought down the oak and slain the turtle.

There was another day of wind and rain around the lake of the oak and the turtle. The wind pushed at the remaining trees, and the rain washed them from twig to root. In that turmoil of wind and rain a small hard-shelled turtle crawled toward the lake. Near the lake stood a small oak tossed by the wind and drenched by the rain. The turtle and the oak might well be the beginning of two new lives to span the centuries, but the pathway of Man is now by the lake. In his hands he carries the power of destruction. In his Soul there is an impatience which may not await the work of the centuries.

## Gypsy Moth

(From page 30)

by one year's defoliation."

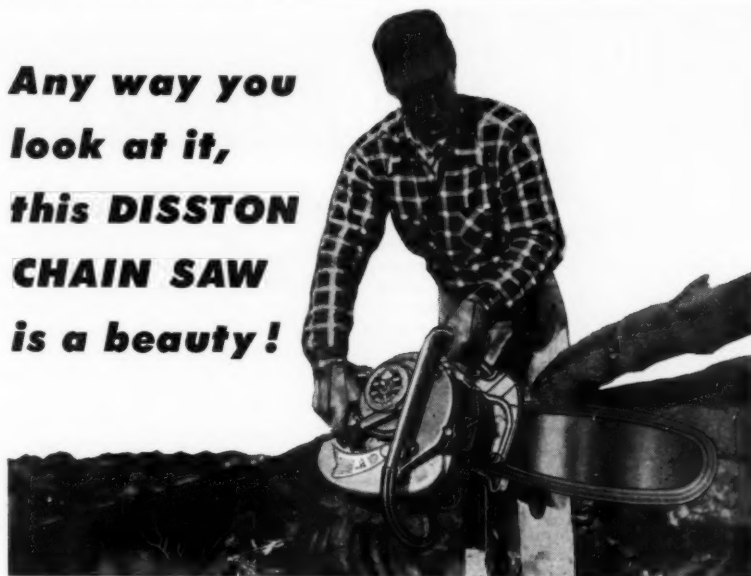
The same study put a value of \$26,768,254 on cordwood trees killed from 1922 to 1932, and added six million dollars as the estimated loss due to retardation of annual growth from 1911 to 1932. Nearly one and one-half million acres of forest lands in New England were defoliated 25 to 100 percent in 1945 and 1946.

The Interstate Committee on Gypsy Moths which met at Boston asked Congress to provide annual appropriations of one million dollars to finance, with state, county and town funds the work of eradication.

"True economy dictates eradication of this pest now," State Senator Edward C. Stone of Massachusetts, chairman of the committee, argued in Washington.

"Just as it is well nigh useless for one town, or one county to spray if its neighbors do not, so it will be if all states do not. The only way to protect the investments already made in New Jersey, in Pennsylvania, in New York, and now in southwestern Massachusetts, is to drive the gypsy moth into the sea as quickly as possible."

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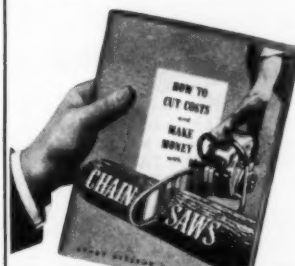
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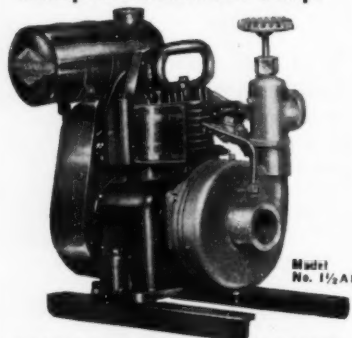
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## NEWS IN REVIEW

The Yale University School of Forestry, oldest in continuous operation in America, marked its 50th anniversary with a reunion-celebration December 11 and 12. Some 350 alumni gathered in the Yale Law School Auditorium on the second day for addresses by four alumni of prominence in the conservation field.

Speaking on "World Forestry," Tom Gill, secretary of the Charles Lathrop Pack Forestry Foundation, expressed the belief that "we are moving into the day when forestry, consciously and planfully should take its own unique place in the economy of nations." Looking toward that goal he hopes that "world forest policy will be guided in good part by American foresters, just as it was begun in good part by American foresters."

Emanuel Fritz, professor of forestry at the University of California and a well-known consulting forester, called for greatly increased cooperation between professional foresters and leaders of private enterprise, especially those in the lumber industry. Said Mr. Fritz, "It would be a grand accomplishment if we could say, at the end of our second half century, that the forestry schools were the leaders in bringing about cordial and close relations between the lumber industry and the forestry profession and thereby gave forestry its greatest boost."

Defining "The Role of Public Agencies in Promoting Forestry in the United States," Charles F. Evans, president of the Society of American Foresters, called for an extensive educational program for the "small" owners of forest land. Bringing up the record of poor cutting practices on small ownerships, he said a program of education should be sponsored by government, industry and the public at large. Recognizing that government and private companies have such educational programs at the present time, he emphasized that "the coverage is pitifully small ... it needs to be greatly expanded."

The final address was given by Benjamin F. Avery, vice-president and general manager of the K.V.P. Company, Ltd., paper manufacturers of Espanola, Ontario who discussed "Forest Management Problems and Achievements in Canada."

**Barriers in the path of applying conservation practices on the land** were the subject of studies initiated recently at the Harvard School of Public Administration and the School of Law of the University of Pittsburgh. This was revealed by Fairfield Osborn, president of the Conservation Foundation, Dean Edward S. Mason of Harvard and Dean Charles B. Nutting, head of the University of Pittsburgh School of Law. The Conservation Foundation sponsored the programs and raised funds to carry them out. It is hoped that reports of the work at both universities will be ready for publication in the autumn of 1951.

**Reuben B. Robertson**, who heads the board of Champion Paper and Fibre Company, Canton, North Carolina, was selected as 1950's "Man of the South," an honor accorded by the *Dixie Business* magazine each year to an outstanding leader in the South. He was among the first industrialists to promote conservation and forest protection, a leader in the commercial extraction of tannic from chestnut, and helped to develop a process for making bleached pulp from southern pines. Last year, the honor was bestowed upon Ernest L. Kurth, Southland Paper Mills, Inc., Lufkin, Texas.

**Four 4-H forestry awards**, sponsored by American Forest Products Industries of Washington, D. C., were presented at the 29th National 4-H Club Congress held in Chicago, November 30. Each recipient got a \$300 scholarship and a trip to Chicago with all expenses paid.

Lynn L. Ogden II, 18-year-old winner from Augusta, Georgia, earned his award by establishing and running a successful pine plantation. Sherley J. Blackburn, 20, of Mountain Park, North Carolina, won because he established and operated a demonstration farm woodlot on his family's property. Horace S. Brown, a 17-year-old Glover, Vermont boy is making plans to be a forester, and his scholarship will go toward his forestry school education. Modock O. White, Jr., 18, of Princeton, West Virginia, was rewarded for his success in operating a forestry demonstration plot on his family's farm woodlot.

## Washington Lookout

(From page 4)

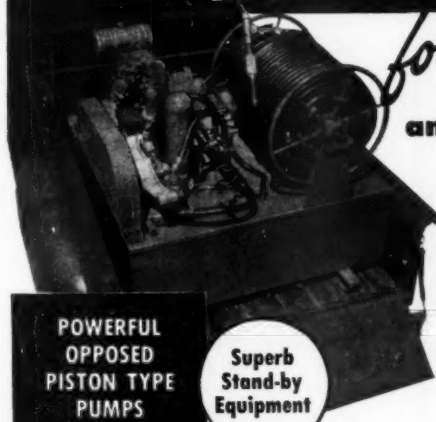
vation Service. Senator Allen J. Ellender will probably be named chairman of the Senate Committee on Agriculture and Forestry. He is the logical successor, under the seniority rule, to Senator Elmer Thomas, of Oklahoma, who was defeated by Representative Mike Monroney. Senator Ellender comes from a great forest state. Less drastic are the changes in the House Committee on Agriculture, but Chairman Harold D. Cooley, of North Carolina, and members of the committee will feel the loss of Stephan Pace, of Georgia.

J. Hardin Peterson, of Florida, will not return to carry on as chairman of the House Committee on Public Lands. His successor as chairman is expected to be John R. Murdock, of Arizona. The committee will then return to the traditional pattern in which the chairman is a representative of one of the western public land states. This is carried out in the comparable Senate committee on Interior and Insular Affairs, whose chairman is Senator Joseph C. O'Mahoney, of Wyoming.

Another leader of long experience who leaves the Congress by his own choice is William M. Whittington, of Mississippi. As chairman of the House committee on Public Works, and earlier of the committee on Flood Control, Representative Whittington has long been a power in the House with regard to all matters pertaining to flood control and to the improvement of rivers and harbors. He will probably be succeeded by Charles A. Buckley, of the Bronx.

While legislation for the control of forest operations on privately owned lands holds small likelihood of being enacted, the pressures for national defense and possible war carry probabilities for stronger and more enduring extra-legislative controls than any which occurred during either of the two previous wars. Doubts in this direction were dissipated during a conference on December 8, when Michael V. DiSalle, Director of Price Stabilization, and Economic Stabilization Administrator Alan Valentine were questioned with regard to price and wage controls. Valentine indicated controls may be forthcoming in the early winter. More or less in support of this, he said: "We have orders prepared and under preparation for all sorts of things."

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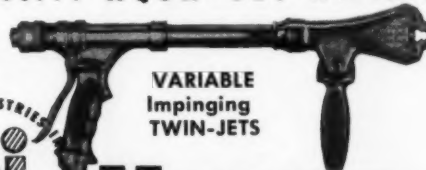
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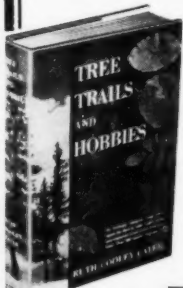
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## Forestry Education in Europe

(From page 20)

German. We were examining some control work, and I was trying to find out if it paid off. He, typically, knew nothing of costs, or else did not wish to disclose them. He said, "The trouble with you Americans is you always want to know how much everything costs. All we take into consideration is, 'Can we keep our forests green?' If we can, we have accomplished our objective."

The Spessart oaks are the most valuable in Germany, the logs bringing \$2000 per thousand at the mill. Truly this forest is magnificent. The Forest Service does the cutting and transports the logs to the mill. I asked the *Forstmeister* what it cost to get the logs cut and transported, trying to learn the stumpage value. He did not have the slightest idea of costs, in fact the thought of costs was as foreign to him as to the forest pathologist.

At Muenden I had lunch with Dean Lemmel at the student dining room. When we came in, the students jumped around, clicking their heels, bowing from the waist, evidently in the best approved German form, but somewhat bewildering to an American. One student made haste to take my topcoat and hung it up for me. Quite obviously a professor commands great respect from the German student. I felt rather uneasy because if my students at Colorado A. and M. were to show such respect I would strongly suspect they were buttering me up preparatory to forcible immersion in the nearest and coldest creek.

I cannot leave Germany without mentioning my visit to the forestry school in Munich. Although not a forest pathologist, I have always been an admirer of Professor Hartig. It was my good fortune to have a pleasant visit with Professor Huber, the present day successor of Professor Hartig. I decidedly felt that I was visiting the home of the great when Professor Huber showed me the library and specimen collections based on the beginnings made by Hartig.

The Scandinavian forestry schools all follow pretty much the same pattern, varying in intensity of management. The Danes have an intensive forestry program because so much of their forest land is in small farm woodlots. Norwegian forestry is more on the extensive side, since

less than five percent of its area is under the plow. Sweden combines the two extremes found in Denmark and Norway. I would hazard a guess that more Americans have attended the forestry school at Stockholm than any other one forestry school in Europe. Dean Streiffert is well acquainted with forestry conditions in the United States and as I recall it, studied at the University of Washington.

The Swedes have much to give us, but take back in return. For example, near Stockholm, I was shown an experimental cutting in which the Swedes were attempting to determine the effect of slash burning on the establishment of Scotch pine reproduction, an application of an American technique. It seemed to me that foresters of the Scandinavian countries and Finland were more flexible in their thinking than other European foresters and quicker to pick up and use American ideas.

Wood products probably play a more dominant role in Finland's national economy than in any other country. Our good friends the Saaris, known to many Americans, undertook the task of seeing that we should learn as much as possible about Finland in the time available.

I saw in Finland what I had never seen before, the drainage of swamp lands to increase the production of wood. In fact, the forestry school has on its faculty a professor of forest drainage. This really is intensive forestry and quite striking to one who has spent much time in the swamp country of northern Minnesota. At that, the drainage of these areas in Finland seems to me wise land use, whereas the same can hardly be said for the swamp drainage by agricultural engineers in northern Minnesota.

Finland is the only country I visited in which a student can freely work his way through college. In all others the social stigma attached to this practice is such that an individual can scarcely face it. This was freely admitted in some schools, but in others the professors interviewed hid behind the feeble excuse of claiming that the scholastic load was so heavy a student could not do outside work.

In 1933 Professor Saari toured the United States and was impressed by (Turn to page 42)

## Menacing Mesquite

(From page 12)

floods, hard winters, birds, rodents, and other animals) begins more than 75 years ago when man began to overstock the ranges. Another element in the spread of mesquite was fire.

Although annual burnings retarded the spread of woody vegetation, range experts now believe the practice merely paved the way for rapid infestation, since fires weakened numerous acres of good sod. Once rooted in spots where the grass was thin, the mesquite seedling escaped fatal injury from fire until it was able to shade the ground, warding off tall grasses which had been a hindrance to its growth.

Subsequent fires could kill its top, but buds from the underground stem were able to send up sprouts, which in time became part of an invading thicket.

Other elements affecting the spread of mesquite were droughts and hard winters, against which the grasses lacked protection. Floods and animals, too, carried the mesquite seed to clean areas. Yet, man himself became the greatest single factor in the

invasion.

The Texas Pacific Railroad was built through the range country in 1883, land speculation boomed, and stockmen began to fence the ranges. By 1885 southwesterners realized that the country had been overstocked. This new development gave the mesquite tree its grand opportunity to spread.

Thus today federal, state, and local agencies experiment to control further infestation of mesquite and search for methods to rescue once productive areas from mesquite thickets. But in this fight, which makes use of brush cutters, tree-dozers, sodium arsenite, and other machines and chemical mixtures, a great many people still defend the tree for its aesthetic qualities. And the defenders include a number of ranchmen who praise it for the nutritious stock food and the shade.

No one is able to predict the success or final outcome of the eradication program. Perhaps, as an old saying went in connection with weather prediction, "the mesquite knows."



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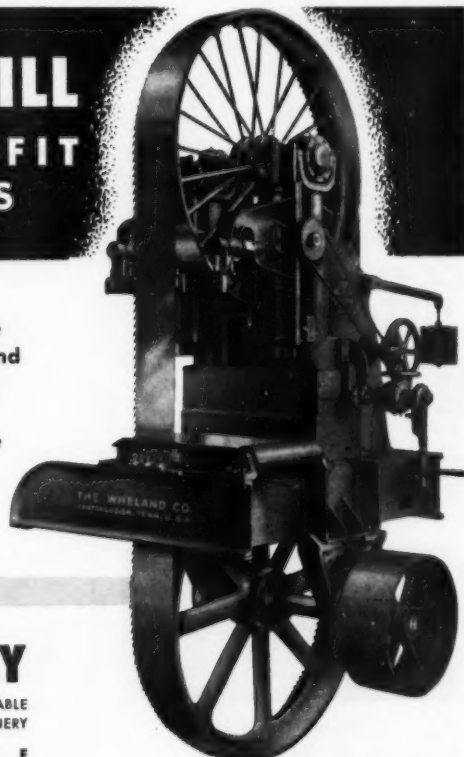


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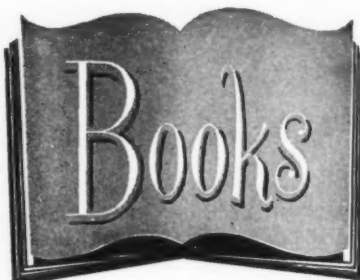
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**A Natural History of Trees of Eastern and Central North America**, by Donald Culross Peattie. Published by Houghton Mifflin Company, Boston, Massachusetts. 606 pages, illus. Price \$5.

Wooden ships decay faster than oaks can grow; in Tennessee the tulip poplar is known as canoe wood; Daniel Boone made himself several cherry caskets and occasionally slept in them; in the three hundred years of its exploitation, white pine, more than any other tree in the country, built this nation, literally and figuratively. Do you remember some of these stories in the Atlantic Monthly, Natural History Magazine or Science Counselor dealing with interesting facts about trees? Donald Culross Peattie has now combined these and many others into a book about all the trees of eastern and central North America.

The vari-toned map and key confronting the readers on the inside cover at once arouse interest for the pages that follow. Depicted are the nine natural provinces (ranges) of the trees described within the 606 pages. Be the reader nature lover, student, or layman, he will be captivated by the author's presentation. Not only is there a complete description of each tree, including its range, wood, bark, flowers and habits, but there is a sidelight story of its use commercially or of its significance historically.

Enhancing the book is the superb art work of Paul Landacre. To the most minute detail, leaves, flowers

and fruits are pen-photoed in exquisite shadow art. Here, indeed, is a complete natural history of trees written and illustrated in such fashion as to "ring-the bell" for the student of dendrology, open new vistas for all lovers of trees, and compete as a textbook in schools of forestry. The key to family, genus and species is simplified and readily understandable, thus creating new interest in the woody plants. If you are a student of or user of trees, read this book and having done so it will become a "must" for your library.

Nelson H. Fritz

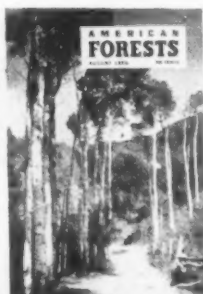
**Forest Products**, by Nelson C. Brown. Published by John Wiley & Sons, Inc., New York City. 399 pages, illus. Price \$5.

Prelogging, integrated logging, relogging and salvage logging may seem to have no bearing on the shoes you wear, the chair you sit in or the paper you read but they do have a definite bearing on the price you pay for these and thousands of other articles whose origins lie in trees. It is the way it deals with forest products that makes it outstanding. Citing how economical harvesting of timber and its efficient utilization have made possible the development of permanent industries giving us hundreds of new products we learn of the many factors that determine the most profitable form of product. What advances have been made in recent years, how and why they were developed and their advantages to our people are all fully discussed and the results completely substantiated through sound economics and good forestry principles and practices.

From construction materials through chemically derived products, mechanically reduced products, containers, and fuel to miscellaneous products the reader is taken on a wood wonder tour through the forest, into the mills and plants to follow step by step the various operations that lead to a completed product and its end use.

Written as a text, the student of today perusing its pages will emerge with a far greater knowledge of forest products than did his counterpart some fifteen years ago. What is more he will know the economic background of a product's existence and his respect for the business aspect of proper forestry will be increased.





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## Venezuelan Forest Resources

(From page 25)

division. Although the Forestry Department has been undergoing a trial and error program for checking forestal exhaustion, it has successfully launched an ambitious publicity campaign against fires in particular and forestry in general. Blazing flames leaping from prominently displayed billboards, cinemas and brochures entreat the populace to fight fire.

Learning that policies which work effectively in one nation do not necessarily succeed in another, the forestry division now is endeavoring to fit a forestal pattern to Venezuelan dimensions. It recognizes the lack of skilled technicians to implement the forestry law, so is taking steps to train nations in this capacity.

Reforestation presently has been concentrated on strategic watershed areas—particularly that of the Macarao region which feeds Caracas and environs. To date, about three million trees have been planted. The figure might appear trifling until considering Venezuela has a population of only 4,500,000 persons.

The fourth front has been taken up by the Agronomica-Economica division of the Ministerio de Obras Publicas (MOP) which is comparable to the U. S. Bureau of Reclamation. It has classified 1,920,000 acres of land north of the Orinoco as a first step in rehabilitating the forests, lands and people. At present, it is using reforestation as an important function of its several large irrigation projects and also is contemplating reforestation in conjunction with highway engineering.

Where wind and rain erosion reduced the blueprint capacity of irrigation projects by heavy silt deposition, MOP is planting leguminous plants for quick-soil fixation, cactus fences until tree barricades can take over, and trees for soil conservation so that irrigation projects can be restored to full-operation capacity.

Last, but not least, has been the front taken in the educational field. In connection with a widespread alphabetization program for adults, the ministries of agriculture and education have cooperated to bring conservation and forestry to the agrarian populace. Two years ago, an *escuela forestal* (forestry school) was established at Junquito to train forest guards in a concentrated two-

year program comparable to that of the U. S. Civilian Conservation Corps, now defunct. To date, it has graduated 40 students and has an attendance of 120.

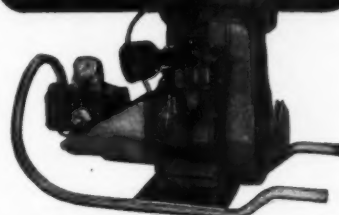
Simultaneous with raising educational standards, forestry officials recognize a need to raise salaries and living conditions of its personnel. Due to the disproportionate expenditure of taxes within the capital area, Venezuela has been handicapped with a concentration of key minds in Caracas to the detriment of its forests, soil and water resources.

Apart from taking these steps as a conservation measure, Venezuela now is confronted with protecting the forests as an industry. Lumbering is relatively new. Originating in Portuguesa State in 1930-1939, it spread south and west into Barinasa and Apure states—attaining its peak during the war when importations were scarce. These states, coupled with Cojedes, produced four percent of the total timber from 1936-1944, and in 1944 produced 182,334 cubic

(Turn to page 44)

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## Forestry Education in Europe

(From page 36)

the practice of American students earning part or all of their way and thereby increasing, if anything, their standing among fellow students. He reported to the Union of Finnish students on this custom. They took it up enthusiastically, and the practice of self-help is now accepted at all Finnish institutions of higher learning.

In Scandinavian countries, I had noticed many young men and women wearing what looked to me like yachting caps. While in Finland I learned that these are student caps which they may wear as soon as they have passed their student examination (college board). The donning of these caps is an occasion for great hilarity, with much singing and parading. This custom is carried

on in Norway, with the students wearing red caps.

The Norwegian forestry school at Oslo was the last one I visited. From there I went to the old home place near Flekkefjord and visited relatives I had never expected to see. I told them what I had been doing in Europe and at once they wanted to know what conclusions I had reached. How did the European schools, especially the one at Oslo, compare with those in the United States?

My tempered reply was that there were differences and debatable ones, but it seemed that for the most part each country had worked out a system of forestry education best for its particular needs. After mulling the idea over for a year or more, my answer remains unchanged.

## Adirondack Pack Basket

(From page 26)

Obtainable in any desired size, a large pack-basket is about twenty inches high in the front, measures twenty-two inches in the back, is nineteen inches in diameter and weighs about four to four and one-half pounds. They are also woven in much smaller sizes for children. They are made from ash, with the black (sometimes called brown ash by the Indians) favored over white. A narrow tight weave is indicative of better quality.

Shoulder straps are generally of canvas webbing, the least expensive material, and used in preference to leather because perspiration-soaked leather rolls are a tasty meal for the numerous porcupines of the north woods.

Waterproof canvas covering for the top (some baskets are covered all around) takes the place of a ground or shelter cloth for protecting its contents from rain. Once the woodsman has used the pack-basket, he prefers it to any other form of pack.

The Indians alone seem to know how to select the best trees for the splints. They prefer the black ash, though it is scarcer, because of the tensile strength of the splints. White ash is more brittle. The log is cut to desired length and rived; that is, a mallet, maul or ax head is used to pound the log, preferably while it is still damp or after it has been soaked. The log is pounded up and

down its length and turned in pounding, so that the layers of wood growth can be peeled off.

A wheel spoke shaving knife has been used by some old-timers for more quickly cutting out splints. Some layers are thinner, some thicker depending on the year's growth of the tree. Imperfect splints, or snys, are discarded. The economic loss of wood means nothing to the Indian; he uses only the best in making a basket for himself or friend. Splints are graded according to thickness. Through the years simple tools have been improved upon, but in general use is a vise-like arrangement with a knife against which the splints are pulled (never pushed) for getting thicknesses. Widths are obtained by using gauge-like cutters, sometimes made by imbedding watch blade springs into a wooden handle.

The Indian takes great pains with his handiwork, weaving the pack-basket tightly, beveling the turned up bottom splints, finishing off the whole product smoothly. The basket is started with wide splints that narrow down toward the top to give the bulge that sets the Adirondack pack-basket apart from others. Splints are kept moistened to prevent breaking and they are shaved on both sides to eliminate any roughness. A partly completed basket will be allowed to stand and dry, then the splints are tightened before it is finished.

Abenaki craftsmen who brought the pack-basket into being were also adept at making birch bark canoes and bark containers for preserving fruits, meats and animal blood (for bouillon) against leaner days. Some bark animal scent bottles are still in existence after a century of use, the bark being extremely long lasting unless buried in the ground or purposely allowed to rot.

The older tribesmen still weave

baskets; the younger can make more money at other work. And it's the same story with the white natives of the present generation who can't be bothered with perpetuating the simple crafts. The so-called commercial product, lacking the skillful touch of the artisan, is cheaper and the competition is too keen for the few who still do basketry. This makes it difficult today to obtain a good pack-basket.

## Oregon States Its Case

(From page 9)

of fire protection in high hazard areas and development of modern techniques in reforestation. As a result, this experimentation has paid handsome royalties in the way of improved aerial seeding, rodent control, silviculture and forest rehabilitation.

Improvements have been accomplished, too, in the fields of disease and forest insects. The cooperative research undertaken by the state, U. S. Forest Service and the Bureau of Entomology Plant Quarantine in the control of the spruce budworm was particularly effective for furnishing the "know how" on the 1949 and 1950 spruce budworm projects. The great budworm aerial spraying project—largest of its kind in the country—was 99 percent satisfactory.

Our state forestry department works closely with sportsmen to make certain that our policies in forest management develop the ultimate in multiple use of the forests for all our citizens, to get twin crops of timber and game. We keep a constant eye on the problems of watershed cover, working with towns and cities to insure a steady supply of the world's purest water. With industry and the public, our state forestry department has developed in the Keep Oregon Green program one of the nation's outstanding fire prevention campaigns. We cooperate with every segment of our population as a full partner, not as a dictator or law-layer-downer.

More than 3,262,193 acres of our Oregon forest woodlands are owned by nearly 34,000 farmers and other small owners. A farm forester with several assistants forms an important division of state forestry. Farmers learn about markets, about proper management and harvesting of their farm woodlots to insure a perpetual crop of wood products at a profit. There is much more in our state

forestry program, and these obviously are only highlights of accomplishment on a state level.

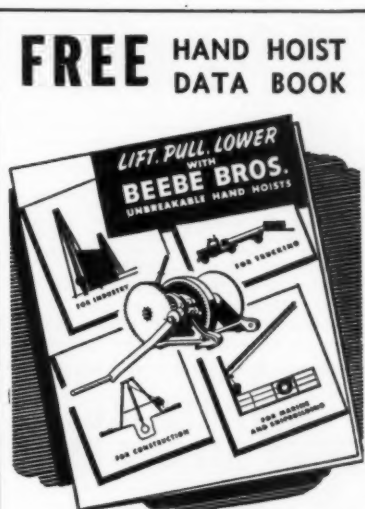
We want no federalization of our Oregon forests. We want no meddling with our proven methods of tree roots forest management. We are all neighbors here in Oregon, whether we work for the state or for industry, and we want to run our own affairs as every true son of the West has done for a century or more. Let those who would impose carpet-bagging, socialized, push-button forestry on us first look to their weapons, for they will get a fight in Oregon.

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Below: An FZZ (or HPZZ) is invaluable in fighting this type of fire which burned over 3000 acres in Unity, New Hampshire. Photo courtesy of U. S. Forest Service.



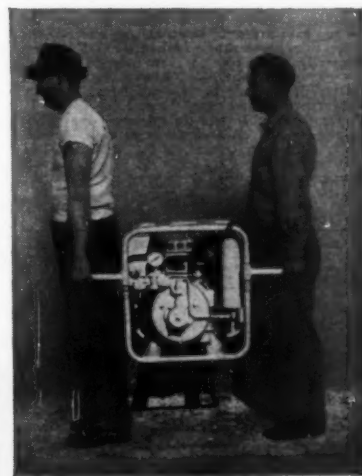
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## Venezuelan Forest Resources

(From page 41)

meters—or 79 percent of the total volume.

Lumbering is uncertain because of its high costs of production. The limiting factor has been transportation. Freight charge per ton for hauling lumber to Caracas is from three to five times the transportation costs in Europe or the United States.

Lumber operators feel that unless the government gives them immediate support by way of roads, subsidization of units for artificial drying and for treatment of lumber products and protective tariffs, the industry is doomed.

Venezuela has about two and one-half acres of forest land for each inhabitant, according to a report made at the third Inter-American Conference on Agriculture held in Caracas in 1945. Historically, cedar and mahogany have dominated the field. Now the saqui-saqui, because of its steel-like resistance to water, is finding a worldwide market. Other woods, too, should have a greater economic value—if present laboratory tests confirm the nation's expectations. Meanwhile, Venezuela is keeping an eternal vigilance over her forests.

## Prayer Trees

(From page 21)

you cattlemen use the Mesa for any inspirational help you can give the people of the county." One old cowpuncher slapped his knee and said, "Why, ranger, you got us wrong. There ain't a cowpoke among us that could inspire a jack rabbit to live a better life, but this forest and this view would make the devil himself whitewash his ways."

That first Camp Meeting on Nogal Mesa lasted four days. Every rancher and family within a 150-mile radius camped on the chosen grounds, ate the food donated, and listened to non-denominational religious services.

Nogal Mesa became the birthplace of a custom that is as western as wide-brimmed sombreros and sharp-roweled spurs. Rough pine buildings have replaced the old cook tents and tabernacle for the hundreds of ranch families who camp under the trees each year, but the cowboy still throws his bedroll on the ground, juggles his tin cup of black coffee on his knee, and smiles when a summer shower traces rivulets down the seams of his saddle-tan face.

Now, there are seven yearly meetings in Wyoming, Colorado, New Mexico, Arizona, and Texas, sponsored and managed by the cattlemen in each of the seven sections.

The most unique part of the Camp Meeting is the five o'clock service held each day by the ranchmen. Cowmen are plain, straightforward folks, liking their religion as simple and unfauciful as they can have it. The men decided their thinking powers worked best when they were

hunkered close to the ground whittling a piece of cedarwood, not bound to stiff pews or pulling at starched collars.

They decided that preachers are a big help, but to fully express their own views, they'd rather not have the preachers around. At their five o'clock meeting, all they needed was a Bible for someone to read a bit of scripture from, and then they'd each kind of speak whenever they felt like it, easing troubles off their chests and sharing thoughts with neighbors. The cowmen didn't want to use the tabernacle for their service.

Ponderous theologies have been expounded in the world's man-made temples, doctrines to influence the thinking of generations. I doubt that any such weighty theories grew beneath the simple Prayer Tree, yet the natural beauty of God's making has created inspiration for a few hundred American citizens each year in the Southwest. Fundamentally, it is the little man who keeps the world progressing, and simple virtues create rightful living.

Three camps, Pagosa Springs, Colorado, Snowy Range, Wyoming, and Montosa, New Mexico, use the ponderosa pine as their Prayer Tree. Montosa men chose a thrifty young "school-marm" whose trunk is aging yellow. The twin spires of the living church pierce the clear blue of the western sky. The duff of the three-needle clusters forms a pungent mattress for high-heeled boots, while the small brown cones lure the boys to a game of catch.

At Perkinsville, Arizona, the



Prayer Tree seems to sense it is the only tree in a broad valley of lush grass, and strives to shade a wide area of land.

The stately Rocky Mountain white oak is the Prayer Tree of the Glenwood, New Mexico and Sonoita, Arizona camps. Though not as massive as her eastern relatives, the western oak is a proud gray-barked tree flaunting dark green leaves.

"How old do you reckon our

Prayer Tree is?" one stockman asked an old-timer of the Mesa.

"Only a couple hundred years," the old-timer replied. "I just been sittin' here athinkin'. We got us a church that grows bigger and better every year. We never have to fix the roof or lift a paint brush, and I reckon when you come down to facts, there couldn't be a prettier temple anyplace 'cause God made this one Himself."

## Davy Crockett's Cougar

(From page 13)

side to side. They would have fallen like wheat under the sickle. The cougar let out a screaming howl that sounded more like seven steamboat whistles in three fogs than anything else excepting Old Death himself.

Davy shivered, and that made his teeth grate. The cougar squinted up his eyes and his jaws set as though he'd just heard the most horrible sounds he ever hoped to hear, outside his own. Then he bucked up and gave a hiss and a snort. For a minute Crockett figured he was scalded to death by the steam. But seeing he wasn't, he says, "If he can blow hot, I can blow cold," and he did. The next thing he spied icicles dripping from the big cat's whiskers.

That was enough ceremonies for both. Right soon they were tight together, hugging for death and tugging for breakfast. The stud-cougar, first-off, walked his claws right up Crockett's arm and sank them into his shoulder as though drilling for oil. Crockett hunkered over and sank his tushes into the cougar's short ribs until the bones creaked. Then he reared back, and the cougar saw his paw would be torn clean from his shoulder before this hide would give to his claws. So he swung his jaws for a bite. Crockett just let him bite into his cheek and hung there. Then he unlimbered an uppercut to the cougar's weakest jaw and drove a jolt to his breadbasket.

Nine more each of the same sunk him. Crockett toted him home like a babe in arms, the cougar whimpering, "Me-me."

From then on that same animal was a screaming pet in the Crockett house. When Davy would come home of a dark night, the cougar'd light him up to bed with the fire of

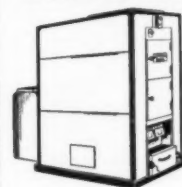
his lookers. He brushed the shack out each morning with his tail, and Saturdays he did all of Mrs. Crockett's heavy work.

Uncle Ben Cotter told many another Crockett story and cougar tale before the summer was done. And the last night I was there I woke up, sure I was hearing a cougar scream at last. I didn't find out the truth till a year later.

Uncle Ben worked a sell on me. He kept up steam in the old engine's boiler until I was sound asleep, then set the whistle so it would let loose the most monster screech in the night a boy could imagine. I can still shudder, remembering it.

But never, never yet have I heard the real scream of the cougar of the West, in a forest night.

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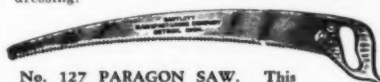
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**AFA'S best attended** Board of Directors meeting in many years was held December 7 and 8 in New York City, only two of the 17 officers being absent. A visitor to the meeting was D. C. Everest of Rothschild, Wisconsin, an honorary vice-president and presidential nominee for 1951. Items of business included a number of points involving Association policies and activities, chief of which was adoption of a resolution favoring construction of access roads on federal lands to open new timber sources for war emergency. That resolution is quoted here in full:

*In order to meet the increase in the demand for lumber, pulpwood, and other forest products that will result from the present national emergency, it is essential to make use of supplies of virgin timber not now available. The American Forestry Association there-*

*fore urges the Congress of the United States to appropriate adequate funds for the construction of access roads which will open up the resources of the forests and other lands under federal administration which are open for economic use and at the same time will facilitate their management for sustained timber production.*

**Other action** taken by the Board included:

Approval of an Association operation budget for 1951 of \$183,000.

Authorized printing at an early date of two new Association publications: *The Muskingum Story* and *American Forestry Progress, 1944-1949*.

Approved, depending on general world conditions, a 1951 annual meeting—if possible, jointly with the Association of State Foresters.

Approved a program of member-

ship expansion in 1951, including magazine subscriptions, individual and corporate members.

Considered several revisions in the Association's By-Laws and authorized the By-Laws Revision Committee, headed by Karl T. Frederick, to draft its recommendations for vote at the next meeting.

Expressed continued interest in holding a conference of state governors and conservation officials in Ohio's Muskingum Watershed Conservancy District during 1951 if conditions permit.

Studied a prospective survey of membership reading tastes with an eye toward magazine improvement.

**AFA's director** of Trail Riders of the Wilderness expeditions, Dorothy Dixon, is busy completing plans for trips to be conducted in 1951, and the completed schedule will be ready for mailing early this year. Aside from the usual Trail Rider expeditions, plans are being made to promote one or two bridle path trips of three days' duration in the historic Lookout Mountain area near Chattanooga, Tennessee.

Such trips may appeal to many members of the Association who do not feel qualified to participate in the more physically demanding pack trips. The Lookout Mountain horseback rides will be conducted during daylight hours, the riders will be returned to the Pan-O-Ram Hotel at night for sleep in a comfortable bed.

Last year 211 Trail Riders partici-

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**C. H. Flory, 1950**—South Carolina, Association of State Foresters.

**Karl T. Frederick, 1952**—New York, New York State Conservation Council.

**William B. Greeley, 1951**—Washington, West Coast Lumbermen's Association.

**Don P. Johnston, 1952**—North Carolina, North Carolina Forestry Association.

**Kent Leavitt, 1951**—New York, National Association of Soil Conservation Districts.

**George W. Merck, 1950**—New Jersey, President, Vermont Forest and Farmland Foundation, Inc.

**Walter H. Meyer, 1951**—Connecticut, Yale School of Forestry.

**Randolph G. Pack, 1952**—New York, Charles Lathrop Pack Forestry Foundation.

**Lloyd E. Partain, 1951**—Pennsylvania, The Curtis Publishing Company.

**Theodore S. Repplier, 1951**—District of Columbia, The Advertising Council, Inc.

**James J. Storrow, 1952**—New Hampshire, Society for the Protection of New Hampshire Forests.

**William P. Wharton, 1950**—Massachusetts, National Parks Association.

pated in twelve expeditions into the wilds of Montana, Minnesota, Idaho, Oregon, Colorado, Washington, New Mexico, North Carolina and Tennessee. Of this number, 77 were veteran riders, the rest being introduced to the wilderness features of seven national forests and one national park for the first time. Mimeographed lists of the 1950 Trail Riders and the expeditions in which they participated are available at AFA headquarters for any who wish them.

**Veteran Trail Riders** were saddened recently by the news that Rich R. Thomson, outfitter and packer for the Maroon Bells-Snowmass and White River Flattops trips in Colorado since 1938, died at his Glenwood Springs, Colorado home November 21 after a long illness. Rich, 69, had lived in Colorado since his youth and was once active in rodeo circles, at one time holding the world's bronc busting championship. He was also a veteran forest ranger in Colorado's White River country.

**Two colorful films** have just been released by the Fish and Wildlife Service:

*Conservation in Action* tells the habitat needs of salmon, waterfowl, buffalo, mountain goats, moose and many other creatures.

*Hunting the Puma* is an action-packed account of a mountain lion hunt. Excellent photography — with unusual close-ups — makes the picture one of the most interesting wildlife shorts available.



Louis Fabian Bachrach, noted photographer, and Director G. W. Merck share a copy of *American Forests*

An interesting booklet, *Forest and Flame in the Bible*, was given out by county rangers to every teacher in South Carolina to help them in planning Conservation Week and Arbor Day programs. The booklet contains passages from the Bible that tell how we are served by our forests and how we should protect them.

**Corydon Wagner**, vice-president and treasurer of the St. Paul and Tacoma Lumber Company, Tacoma, Washington, was elected president of the National Lumber Manufacturers Association for 1951. The retiring president of the Association, H. M. Seaman, executive vice-president of the Kirby Lumber Company at Hous-

ton, was named chairman of the board.

**John L. Butler** has been named by the Southern Plywood Manufacturers Association to establish an inspection service and serve as its first plywood inspector. The service will be available to both member and non-member plywood manufacturers in the South to assist them in grading, gluing and other manufacturing problems.

**In Connecticut**, over 35 groups and organizations, including federal, state and private conservation agencies, have formed the State Natural Resources Council through which there is concerted effort to find a basic approach for improvement in soil, water and forest management. At its first formal meeting, held recently, more than 300 delegates attended, according to the Wildlife Management Institute.

**Dwight L. Phipps** was appointed acting state forester of Oregon to serve during the military leave of State Forester George Spaur. John B. Woods, Jr., has been elevated to the post of deputy state forester, and James Walker will handle the protection division as assistant state forester.

**New Life Members:** Miss Mary L. Hayward of New York, W. W. Knight, Jr., of Ohio, Miss A. G. Roediger of North Carolina, Clifford W. Wylie of Washington, and F. J. Zeithamel, Jr., of Iowa.

S.L.F.

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**Miss Ethel L. Larsen**—Michigan, Chairman, Conservation of Natural Resources Committee, General Federation of Women's Clubs.

**George Houk Mead**—Ohio, Member, National Citizens Commission for the Public Schools.

**Hon. Leslie A. Miller**—Wyoming, Chairman, Committee on Natural Resources Commission on Organization of the Executive Branch of the Government.

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# Editorial

## FACING AN EMERGENCY

The President's mid-December proclamation of a national emergency brought into public focus a condition most of us had already sensed without quite knowing what to do about it. We do not yet know the role we are to play, but we who have the best interests of our forests at heart stand ready to do whatever we can to help make our nation strong and prepare it for any eventuality.

Perhaps our most weighty contribution at the moment is to give counsel to those charged with the responsibility of imposing the restrictions and curbs necessary to speed production of defense goods. We are thinking specifically of the President's instructions to the director of the budget "to reduce non-military expenditures in the new federal budget to the minimum required to give effective support to the defense effort." Real harm could come from a too hasty and injudicious interpretation of those words.

For instance, allocation of funds requested by forestry agencies of the government might all too readily be dismissed as non-essential to the crisis at hand. Yet, since wood must necessarily be considered a strategic raw material in defense production planning, it would hardly be wise to curtail programs designed to supply the trees needed in war or peace.

Even before the President's proclamation was issued, The American Forestry Association's Board of Directors, meeting December 7 and 8 in New York, called attention by resolution to the need for building access roads on our federal lands so that billions of board feet more timber could be logged off remote areas and made available for defense purposes. (For resolution adopted, see page 46.) At first glance, it might seem access roads could await more peaceful times, yet when their construction is linked to timber production they take on added significance.

The same importance must be attached to protection of our forests from fire and from insects and diseases if we are to have continuous production of forest crops. Since fire is such a dramatic agent of destruction, it is hardly conceivable, as G. H. Collingwood points out in "Washington Look-out" (page 4), that federal, state and private agencies will be allowed to relax their vigilance. We may have to be somewhat more vigilant, however, to assure adequate funds to fight insects and diseases, for even in the less hectic years of 1946 to date that program left much to be desired.

Monies requested for short term research, technology and utilization studies will surely be just-

fied in view of the quick benefits they can offer, but long range programs involving research in forest influences, wildlife management and grazing may fall under the blue pencil.

It would be tragic, however, to cast aside a reforestation program which has made such noteworthy strides since the close of World War II, for forest industries are just beginning to realize they can remain in business indefinitely by combining a vigorous tree planting campaign with wise forest management. In event of all-out war, it is probable we would be forced to deplete our forests faster than we can re-stock them, but it would be senseless not to make every effort to hold the balance.

As demonstrated so convincingly in other wars, wood and other resources will be needed in huge amounts. In the procurement, many of the finer phases of long range management will have to be reshaped to step up production. This must be shared on all lands—federal, state and private. It is essential, too, that public and private interests get together at national, state and local levels to work out these problems jointly.

Perhaps a national forestry council could be created among representatives of federal and state forest services, industry, and other private groups. This council could consider and agree on basic policies conducive to attaining stepped up wood production, and to keeping forest lands as productive as increased demands permit. It could help private landowners by devising simple minimum wood cutting standards for each forest type.

Certainly, more intensive utilization techniques will be necessary to get maximum use out of every tree and thus lessen drain on standing timber. In the pulp industry this can be accomplished by using more topwood and thinnings and by more modern methods of wood contracting. Any controls on manpower and prices should be such that they stimulate production rather than hinder it. Equipment and materials allocations to industry should be liberal.

Greater cutting in old growth stands will help alleviate some problems of insects and disease, since these pests wreak their greatest havoc in the older forests. In fire protection, a nationwide system of volunteer wardens, aided by a clear cut prevention campaign and a rigid enforcement of fire laws to crack down on incendiaries, would be advisable.

Now is the time for all forestry interests to get together and dedicate themselves to the common purpose of assuring America's freedom.

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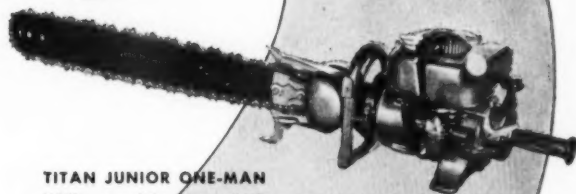
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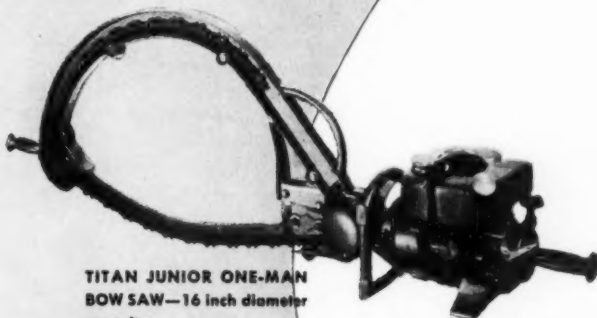
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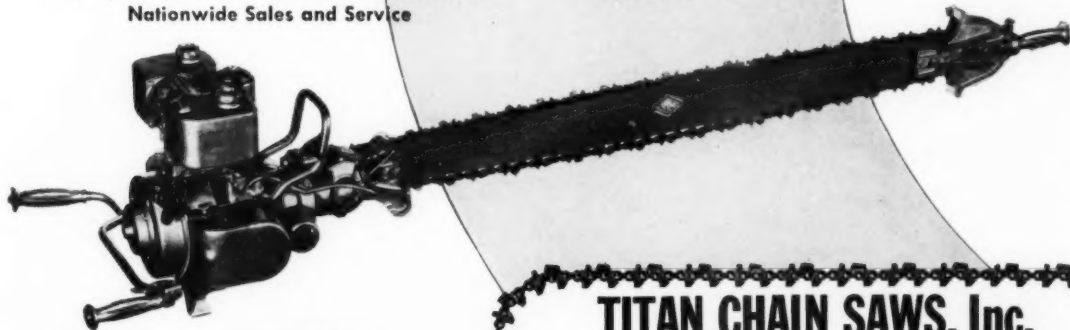
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*Two "Cat" D4 Tractors, equipped with Fleco brush rakes, pile slash for burning, fast and economically.*

Every good logger knows the danger of leaving dry slash in the woods. One of the wisest of Forest Service requirements is the rule covering the disposal of limbs and brush—especially in these times, when the protection of our national forest resources takes on new meaning.

"Caterpillar" track-type Tractors are as perfectly fitted for this job as for all other logging tasks. Powerful and dependable, they roll up slash ahead of the brush rake, and pile it for safe burning.

The importance of "Caterpillar" equipment, both for military needs and for maintaining the nation's productive power, is increased by the present situation. Even with more "Caterpillar" products coming from the factory than ever before, it may not be possible to meet all demands. Talk over your parts needs with your "Caterpillar" dealer. He has the ample parts stocks and service to keep your present machines in good running order if delivery of new equipment is delayed.

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